Healthy People 2010

Leading Health Indicators for Massachusetts

Division of Research and Epidemiology
Bureau of Health Statistics, Research and Evaluation
Massachusetts Department of Public Health
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Acknowledgments

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Introduction

Healthy People 2010 Leading Health Indicators for Massachusetts presents the latest data on the 10 Leading Health Indicators for Massachusetts – physical activity, overweight and obesity, tobacco use, substance abuse, responsible sexual behavior, mental health, injury and violence, environmental quality, immunization and access to health care. Leading Health Indicators have been recommended by the U.S. Public Health Service for monitoring state and local progress toward achieving the goals set forth in Healthy People 2010[1]. The data on Healthy People 2010 Leading Health Indicators for Massachusetts are based on data are based on information provided by state and federal sources. These web pages provide information in one place for easier access by public health program planners, policy-makers, advocates, and the public. As a group, the Leading Health Indicators reflect the major health concerns in the United States at the beginning of the 21st century. The Leading Health Indicators were selected on the basis of their ability to motivate action, the availability of data to measure progress, and their importance as public health issues. The Leading Health Indicators are intended to help better understand the importance of health promotion and disease prevention and to encourage wide participation in improving health in the next decade. These web pages are divided into chapters, with each chapter focusing on a specific leading health indicator. Each chapter consists of a series of graphs comparing the specific leading health indicator for Massachusetts and the United States to the Healthy People 2010 Objective. Within each chapter, patterns by age, gender, race/ethnicity and time trends are examined when data is available. At the beginning of each chapter is information about the objectives selected to measure progress for the specific leading health indicator. The data source or sources for the specific health indicator are also presented at the beginning of each chapter.

[1] U.S. Department of Health and Human Services. *Healthy People 2010: Understanding and Improving Health*. Washington, DC: U.S. Department of Health and Human Services, Government Printing Office. 2000.

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LEADING HEALTH INDICATORS Page

Substance Abuse (continued)

Summary of Leading Health Indicators For Massachusetts

HIGHLIGHTS

Physical Activity

- Rates of physical activity among adolescents decrease as students get older and move through high school.
- Male adolescents are more likely to participate in vigorous physical activity than females (69% vs. 57%).
- Black, non-Hispanic, Asian and Hispanic adults have a lower rate of regular physical activity than White, non-Hispanic adults and the overall Massachusetts population.
- Data from the Behavioral Risk Factor Surveillance Survey (BRFSS) and the Youth Risk Behavior survey (YRBS) show that the proportion of active adults and adolescents has fluctuated in the 1990s, and it remains well or less than half below the target set for the year 2010.

Overweight and Obesity

- Obesity and overweight have increased in both the United States and Massachusetts over the last decade and are moving away from the Healthy People 2010 target.
- Males of all ages are somewhat more likely to be overweight and obese than female adults and adolescents.
- Black, non-Hispanic and Hispanic adolescents have the highest rates of obesity in Massachusetts, which are above the target for the year 2010.
- Black, non-Hispanic adults have a higher rate of obesity than other groups in the state.

Tobacco Use

- Smoking rates have decreased both among adolescents and adults in Massachusetts in the last decade, but they still remain above the target for the year 2010.
- The rate of current smoking among adolescents increases as students get older and move through high school (ranging from 20% among adolescents in Grade 9 to 35% in Grade 12).
- The percentage of cigarette smoking among Black, non-Hispanic youth is lower than the percentage among White, non-Hispanic youth. However, percentages of cigarette smoking among adults are highest for White and Black, non-Hispanics (both at 21%).
- Among adults, persons ages 18-24 have the highest percentage of current smokers in the state.
- In 2000, 20% of Massachusetts adults were current smokers compared to 23% in the United States. Likewise, Massachusetts has a lower percentage of current adolescent smokers than the United States (26% vs. 28%).

Substance Abuse

- Forty-three percent of adolescents did not use alcohol or drugs in the 30 days prior to the Youth Risk Behavior Survey. This percentage is below the U.S. figure and below the target set for the year 2010.
- Percentage of illicit drug use is highest among adults in the 18-24 age group. Asian adults have the highest level of illicit drug use in Massachusetts.
- Twenty-five percent of male adults engage in binge drinking compared to 10% of female adults in Massachusetts.
- In Massachusetts, Hispanics have the lowest percentage of adult binge drinking (14%) whereas Black, non-Hispanics have the highest (21%). All groups, except for Asians, are above the 2010 target of 6%.

Responsible sexual behavior

- The proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active decreases as students get older and move through high school. This percentage is highest in 9th Grade and lowest in 12th Grade (94% vs. 74%).
- In 2001, the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active (87%) in Massachusetts approaches the HP2010 target of 95%.
- Reported condom use by partners among unmarried women is lowest for women between the ages of 35-44 years.

Mental Health

- Data will be available from the 2002 Behavioral Risk Factor Surveillance Survey.

Injury and Violence

- Rates for motor vehicle and homicide deaths for Massachusetts in the year 2000 are already below the targets set for the year 2010. Yet, great disparities exist by gender, age and race/Hispanic ethnicity.
- Men are over twice as likely to die from a motor vehicle-related injury or homicide as women in Massachusetts were in the year 2000.
- Adults between the ages of 15-24 years are at the greatest risk from dying from either a motor vehicle-related injury or from homicide.
- No cause of death so greatly differentiates Blacks from all other Massachusetts residents as does homicide: Black, non-Hispanics are 10 times more likely than White, non-Hispanics to be murdered.

Environmental Quality

- In 2001, 10.4% of adult non-smokers were exposed to environmental tobacco smoke (ETS) at home and/or at work for more than 1 hour.
- Reported exposure to ETS at home or at work is highest for adults between the ages of 18-24 years and lowest for persons 65 years and older.
- Asian adults have the lowest rates of ETS exposure in Massachusetts while Hispanics have the highest.
- No direct comparisons can be made to the United States or to the target set for 2010 since Massachusetts is using other measures for this indicator.

Immunization

- In 2000, the percentage of fully immunized children in Massachusetts surpasses the target set for the year 2010.
- The percentage of Massachusetts adults receiving an influenza or pneumococcal shot has increased in the last 7 years, yet they still remain below the target set for the year 2010.
- Hispanic adults have the lowest percentages who had received an influenza shot during the last year or who had ever received a pneumonia vaccine in Massachusetts. Rates are highest for White, non-Hispanic adults.

Access to health care

- Rates of health care coverage have increased in the state since 1996 and are now approaching the target set for 2010 of 100%.
- The proportion of adults with health care coverage is highest among persons ages 65 and older and lowest among persons ages 18-24 years.
- Hispanic and black, non-Hispanic adults remain the least insured in Massachusetts in the year 2000, followed by Asian, non-Hispanics.

- The proportion of females who receive prenatal care during their first trimester of pregnancy approaches the target set for 2010 of 90%.
- The proportion of females who receive prenatal care during their first trimester of pregnancy is highest among women ages 30-34 years and lowest among women ages 10-24 years.
- Black, non-Hispanic mothers have the lowest percentage of women receiving prenatal care during their first trimester of pregnancy in the state.

Overall Summary Table of Leading Health Indicators

	HP 2010 Objective	Current MA	Current US	Past MA
PHYSICAL ACTIVITY				
22-7 Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion.	85%	62.8%[1] (2001)	69%[1] (2001)	64.5%[1] (1993)
22-2 Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day.	50%	24%[2] (2000)	32%[3] (2000)	22%[2] (1991)
OBESITY				
19-3c. Reduce the proportion of children and adolescents who are overweight or obese.	5%	10%[1] (2001, **actual** overweight)	15%[4] (1999-2000)	7% (1999) (**actual** overweight**)**
19-2. Reduce the proportion of adults who are obese.	15%	17%[2] (2000)	31%[4] (1999-2000)	11%[2] (1990)
TOBACCO USE				
27-3b. Reduce cigarette smoking by adolescents.	16%	26%[1] (2001)	28%[1] (2001)	30%[1] (1993)
27-1a. Reduce cigarette smoking by adults.	12%	20%[2] (2000)	23%[3] (2000)	24%[2] (1990)
SUBSTANCE ABUSE				
26-10a. Increase the proportion of adolescents not using alcohol or any illicit drugs during the past 30 days.	89%	43%[1] (2001)	79%[5] (1998)	52%[1] No Alcohol (1993) 71%[5] No Drugs (1993)
26-10c. Reduce the proportion of adults using any illicit drug during the past 30 days.	2%	7% (2001)	5.8%[6] (1998)	NA
26-11c. Reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month.	6%	17%[2] (1999)	17%[6] (1998)	20%[2] (1991)

[1] Youth Risk Behavior Survey (YRBS).
[2] Behavioral Risk Factor Surveillance System (BRFSS).
[3] CDC, National Center for Health Statistics. National Health Interview Survey.
[4] CDC, National Center for Health Statistics. National Health and Nutrition Examination Survey.
[5] Substance Abuse and Mental Health Services Administration, Office of the Assistant Secretary. National Household Survey on Drug Abuse.

	HP 2010 Objective	Current MA	Current US	Past MA
RESPONSIBLE SEXUAL BEHAVIOR				
25-11. Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active.	95%	87%[1] (2001)	85%[1] (1997)	84%[1] (1993)
13-6. Increase the proportion of sexually active persons who use condoms.	50%	58%[6, 7] (1999)	23%[8] (1995)	NA
MENTAL HEALTH				
18-9b. Increase the proportion of adults with recognized depression who receive treatment.	50%	NA	23%[5] (1997)	NA
INJURY VIOLENCE				
15-15. Reduce deaths caused by motor vehicle crashes.	9.0 /100,000	7.6/100,000[9] (2000)	15.2/100,000[10] (2000)	7.4/100,000[9] (1994)
15-32. Reduce homicides.	3.2/100,000	2.0/100,000[9] (2000)	5.8/100,000[10] (2000)	3.6/100,000[9] (1994)
ENVIRONMENTAL QUALITY				
8-1a. Reduce the proportion of persons exposed to air that does not meet the U.S. Environmental Protection Agency's health-based standards for ozone.	0%	NA 5 Exceedance days per area[11] (2000)	41%[12] (2001)	NA 26 Exceedance days per area[11] (1991)
27-10. Reduce the proportion of nonsmokers exposed to environmental tobacco smoke (serum cotinine level > 0.10 ng/ml).	45%	NA 10.4%[13] (2001)	65%[4] (1988-1994)	NA 28.7% (1993-1994)

[6] BRFSS. Includes people in long-term monogamous relationships. The data on condom use are only unmarried women ages 18-25 yrs.
[7] BRFSS . Unmarried includes never been married, widowed, separated, divorced, and member of an unmarried couple.
[8] CDC, National Center for Health Statistics. National Survey of Family Growth. 1995.
[9] MA DPH. Bureau of Health Statistics, Research and Evaluation. Massachusetts Deaths.
[10] CDC. National Center for Health Statistics. National Vital Statistics System.
[11] Environmental Protection Agency, New England. Historical Exceedance Days in New England of EPA's 8-hr Average Ground-Level Ozone Standard.
[12] U.S. Environmental Protection Agency. Aerometric Information Retrieval System. 1997.
[13] Massachusetts Tobacco Survey, 1993-2001. UMAA Tobacco Study (2001). Exposure defined as: Exposed to ETS for more than 1 hour at home or at work.

	HP 2010 Objective	Current MA	Current US	Past MA
IMMUNIZATION				
14-24. Increase the proportion of young children who receive all vaccines that have been recommended for universal administration for at least 5 years.	80%	81%[14] (2000)	73%[14] (2000)	71%[14] (1994)
14-29a,b. Increase the proportion of noninstitutionalized adults who are vaccinated annually against influenza and ever vaccinated against pneumococcal disease.	Influenza:90% Pneumococcal:90%	Influenza:65%[2] (2000) Pneumococcal 62%[2] (2000)	Influenza: 65%[3] (2000) Pneumococcal 53%[3] (2000)	Influenza: 49%[2] (1993) Pneumococcal 21%[2] (1993)
ACCESS TO HEALTH CARE				
1-1. Increase the proportion of persons with health insurance.	100%	92%[2] (2000)	83%[3] (2000)	89%[2] (1996)
1-4a. Increase the proportion of persons who have a specific source of ongoing care.	96%	NA	87%[3] (1998)	NA
16-6a. Increase the proportion of pregnant women who begin prenatal care in the first trimester of pregnancy.	90%	84%[15] (2000)	83%[16] (2000)	83%[15] (1990)

[14] Centers for Disease Control and Prevention, National Center for Health Statistics and National Immunization Program. National, State, and Urban Area Vaccination Coverage Levels Among Children Aged 19-35 Months-United States. (www.cdc.gov/nip/coverage/data.htm).
[15] MA DPH. Bureau of Health Statistics, Research and Evaluation. Massachusetts Births.
[16] Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital System. 2000.

Physical Activity

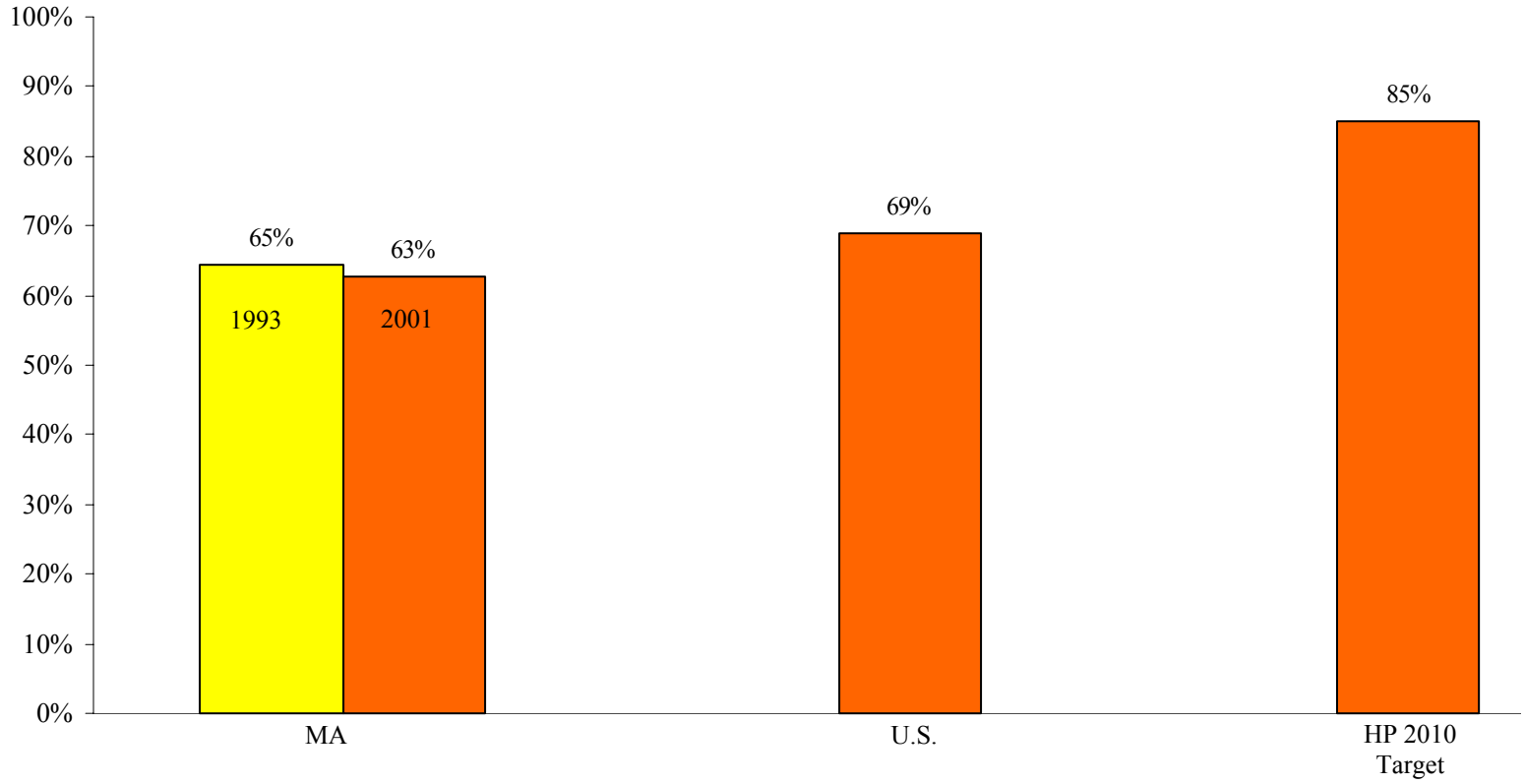
A note about this indicator:

The objectives selected to measure progress among adolescents and adults for this Leading Health Indicator are presented below. These are only indicators and do not represent all the physical activity and fitness objectives included in Healthy People 2010.

22-7. Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion.
22-2. Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day.

Data Sources: Behavioral Risk Factor Surveillance System (BRFSS) and the Youth Risk Behavior Survey (YRBS).

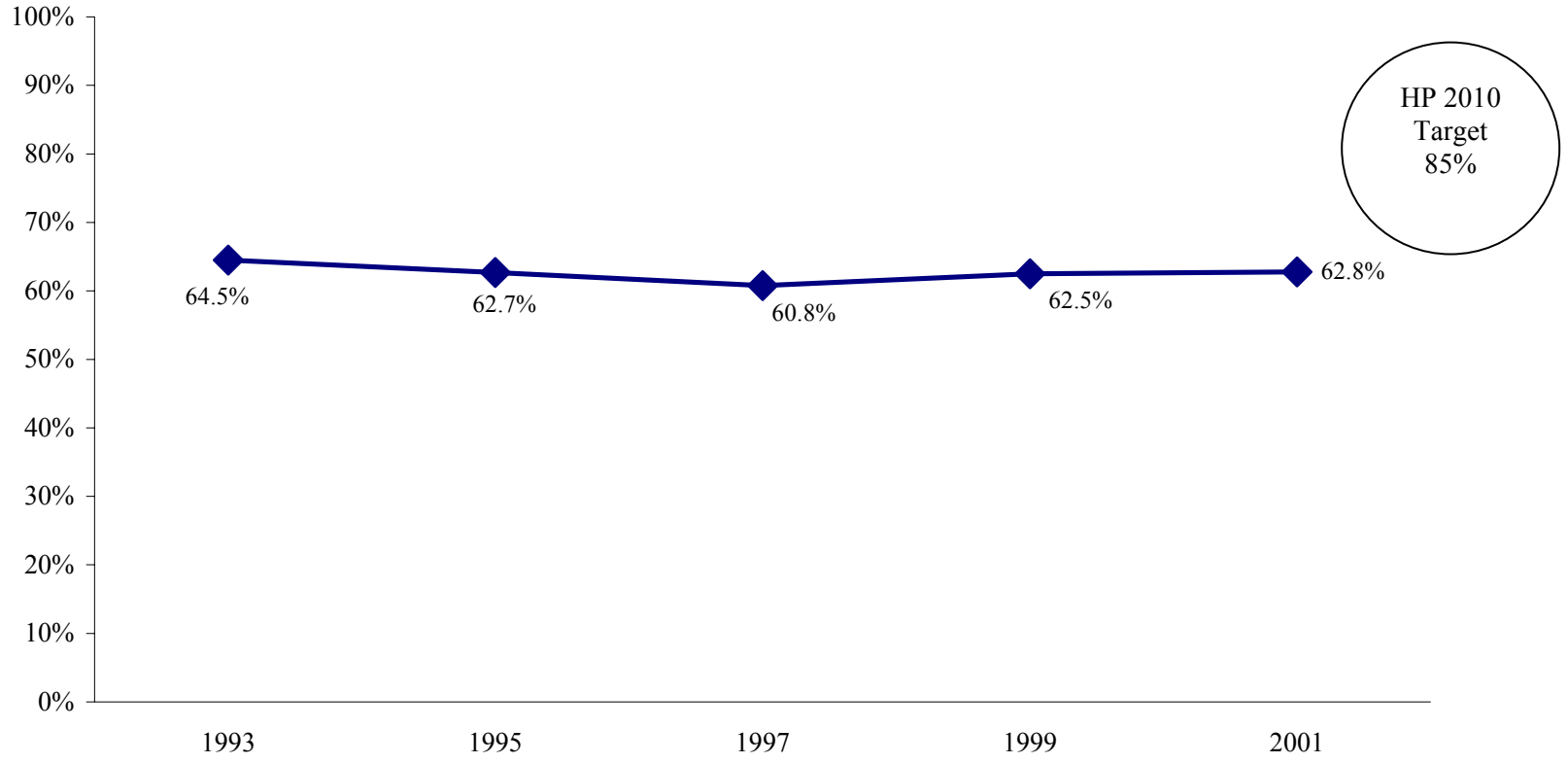
Participation in vigorous physical activity, Adolescents MA (1993,2001), US (2001), HP2010



Objective: 22-7 Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory Fitness 3 or more days per week for 20 or more minutes per occasion.

Sources: Centers for Disease Control and Prevention. Youth Risk Behavior Survey (YRBS). 2001.
Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 1993, 2001.

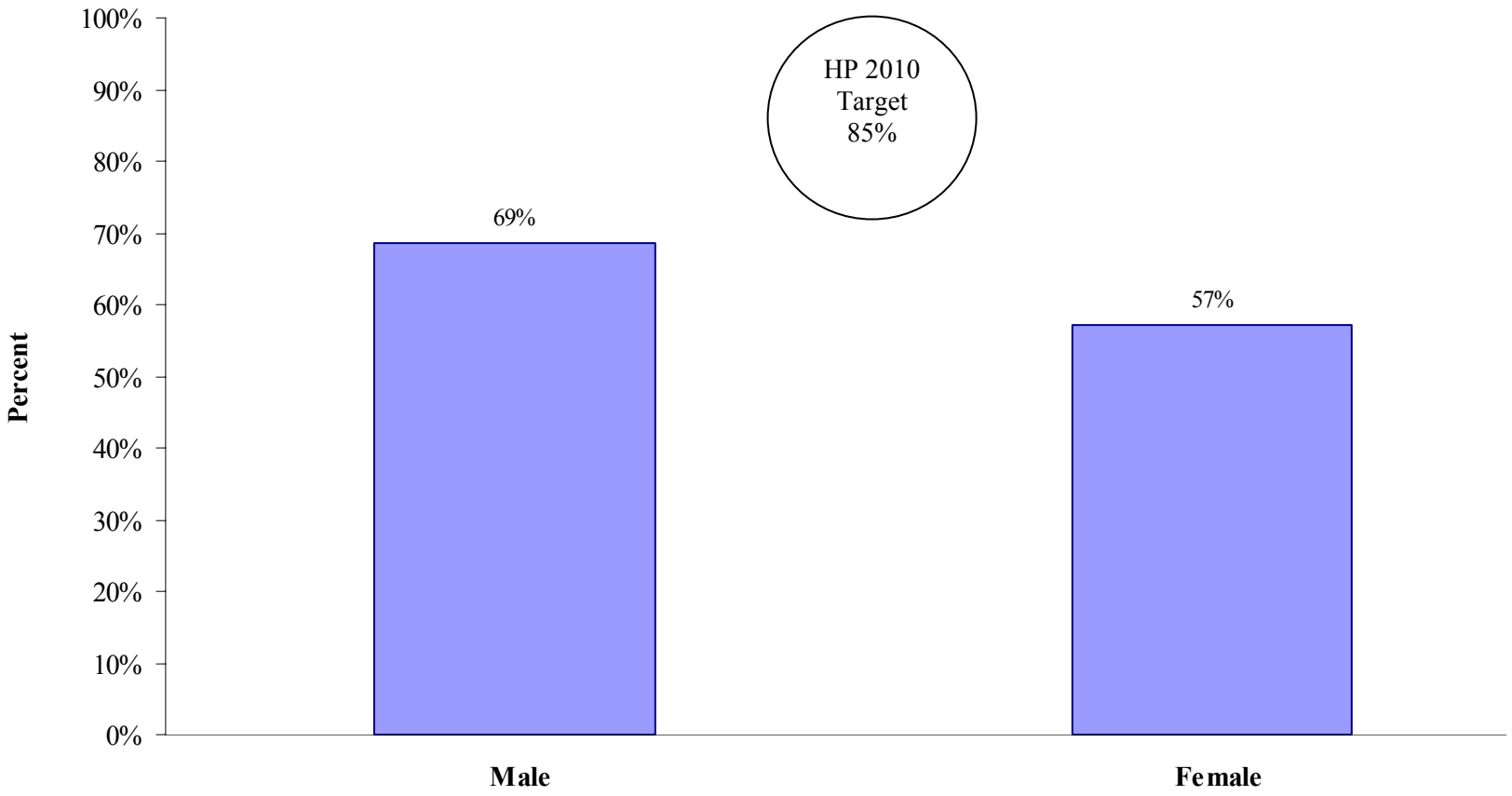
Participation in vigorous physical activity,
Adolescents
MA (1993-2001)



Objective: 22-7 Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory Fitness 3 or more days per week for 20 or more minutes per occasion.

Source: Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 1993-2001.

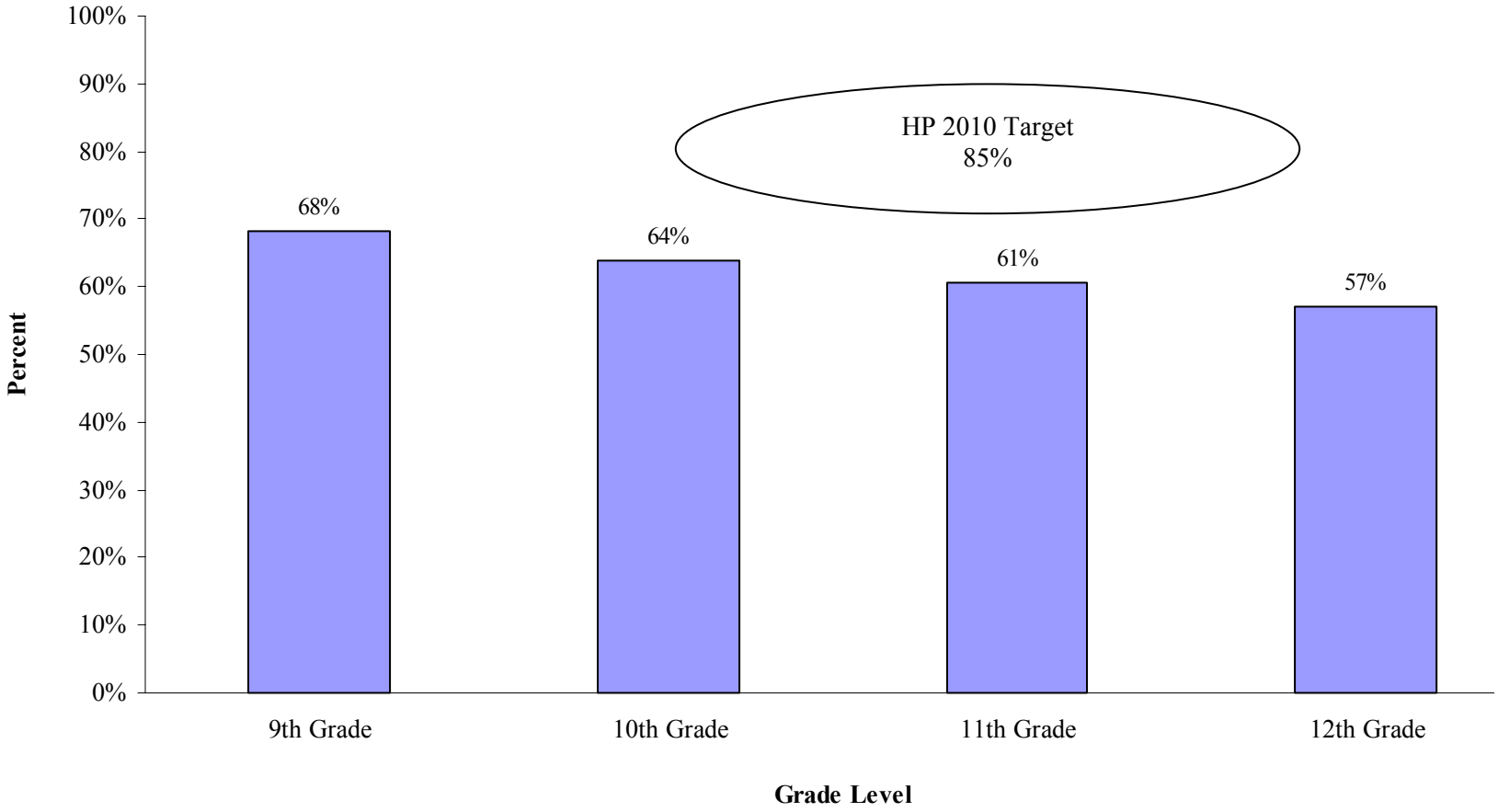
Participation in vigorous physical activity, Adolescents by Gender MA (2001)



Objective: 22-7 Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory Fitness 3 or more days per week for 20 or more minutes per occasion.

Source: Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 2001.

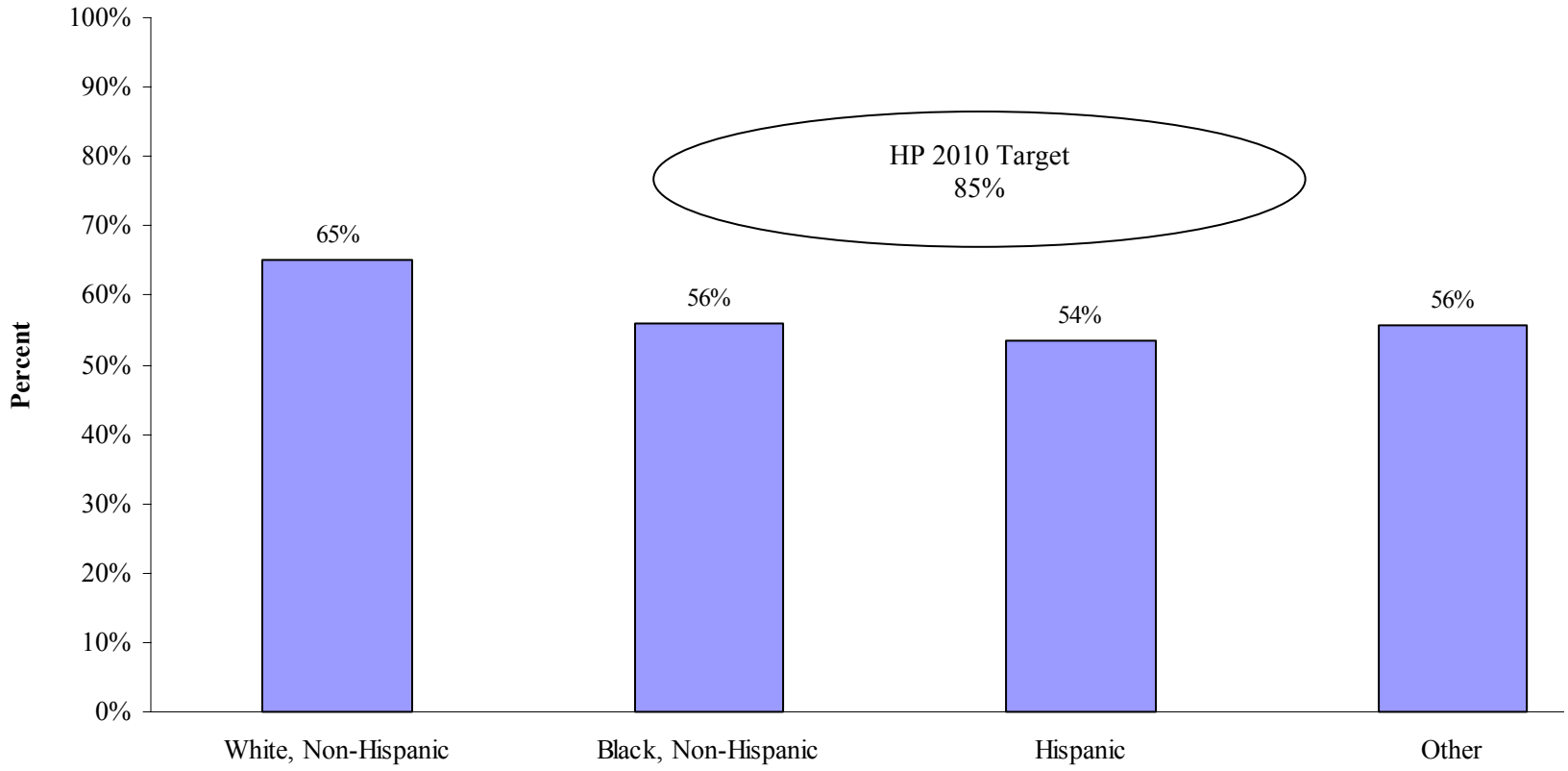
Participation in vigorous physical activity,
Adolescents by Grade
MA (2001)



Objective: 22-7 Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory Fitness 3 or more days per week for 20 or more minutes per occasion.

Source: Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 2001.

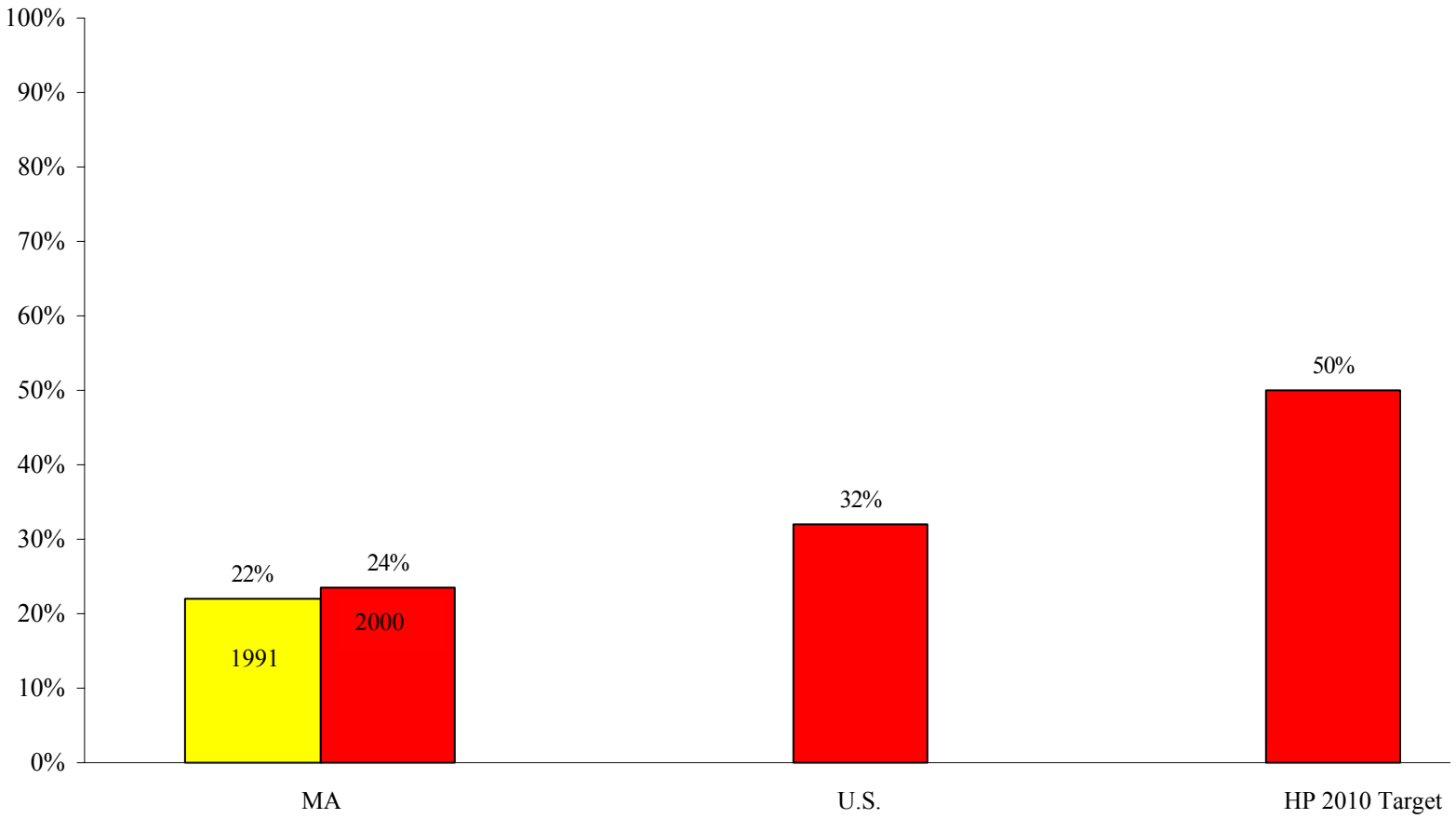
Participation in vigorous physical activity, Adolescents by Race/Hispanic Ethnicity, MA (2001)



Objective: 22-7 Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory Fitness 3 or more days per week for 20 or more minutes per occasion.

Source: Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 2001.

Participation in regular physical activity, Adults aged 18+ yrs MA (1991, 2000), U.S. (2000), HP2010

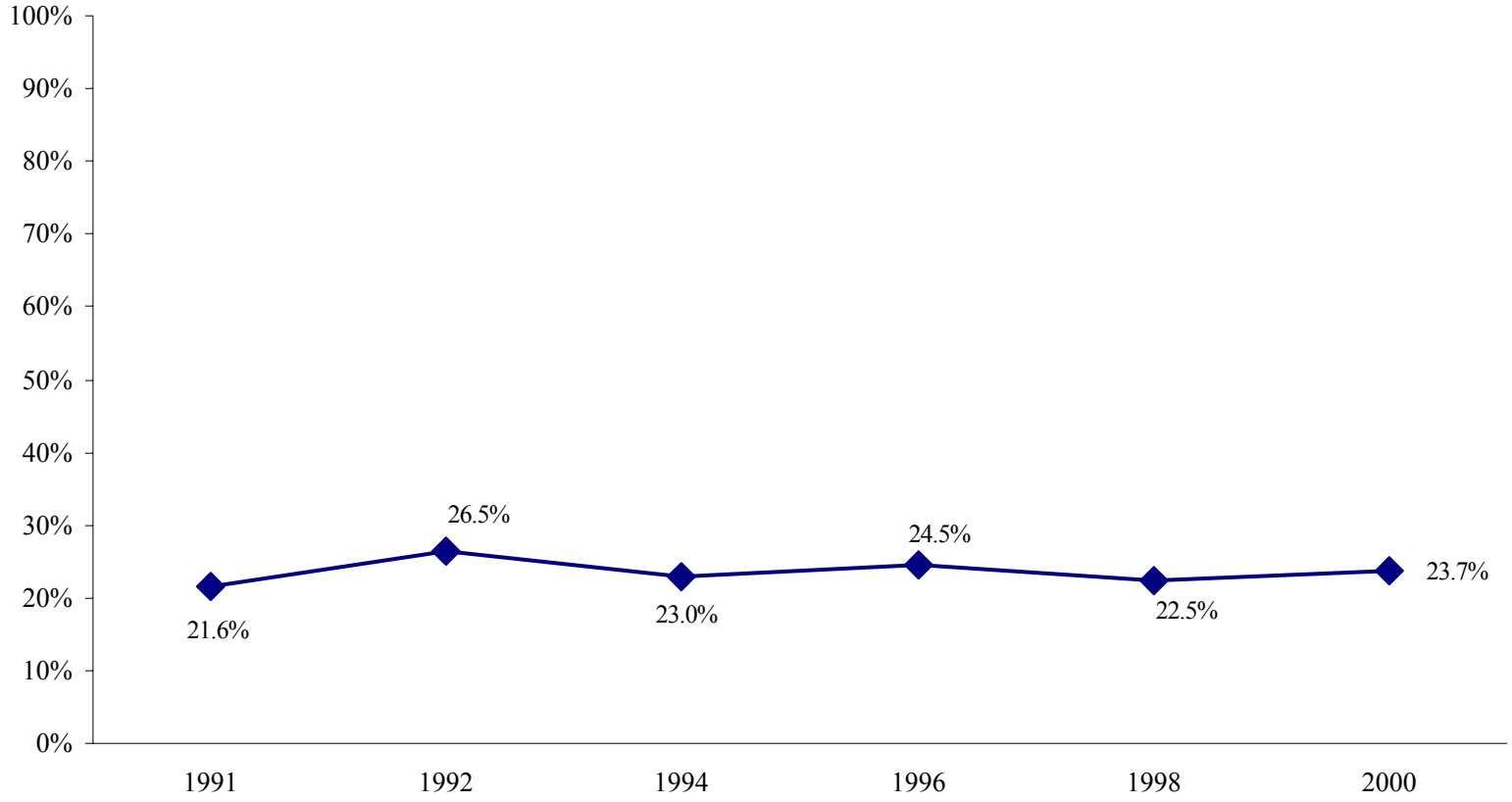


Objective: 22-2 Increase the proportion of adults who engage regularly, preferably daily in moderate physical activity for at least 30 minutes per day

Sources: Centers for Disease Control and Prevention. National Health Interview Survey.2000.
Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1991 and 2000

*Percentages are age-adjusted to the 2000 US Population

Participation in Regular Physical Activity
Adutls 18+ years
MA (1991-2000)

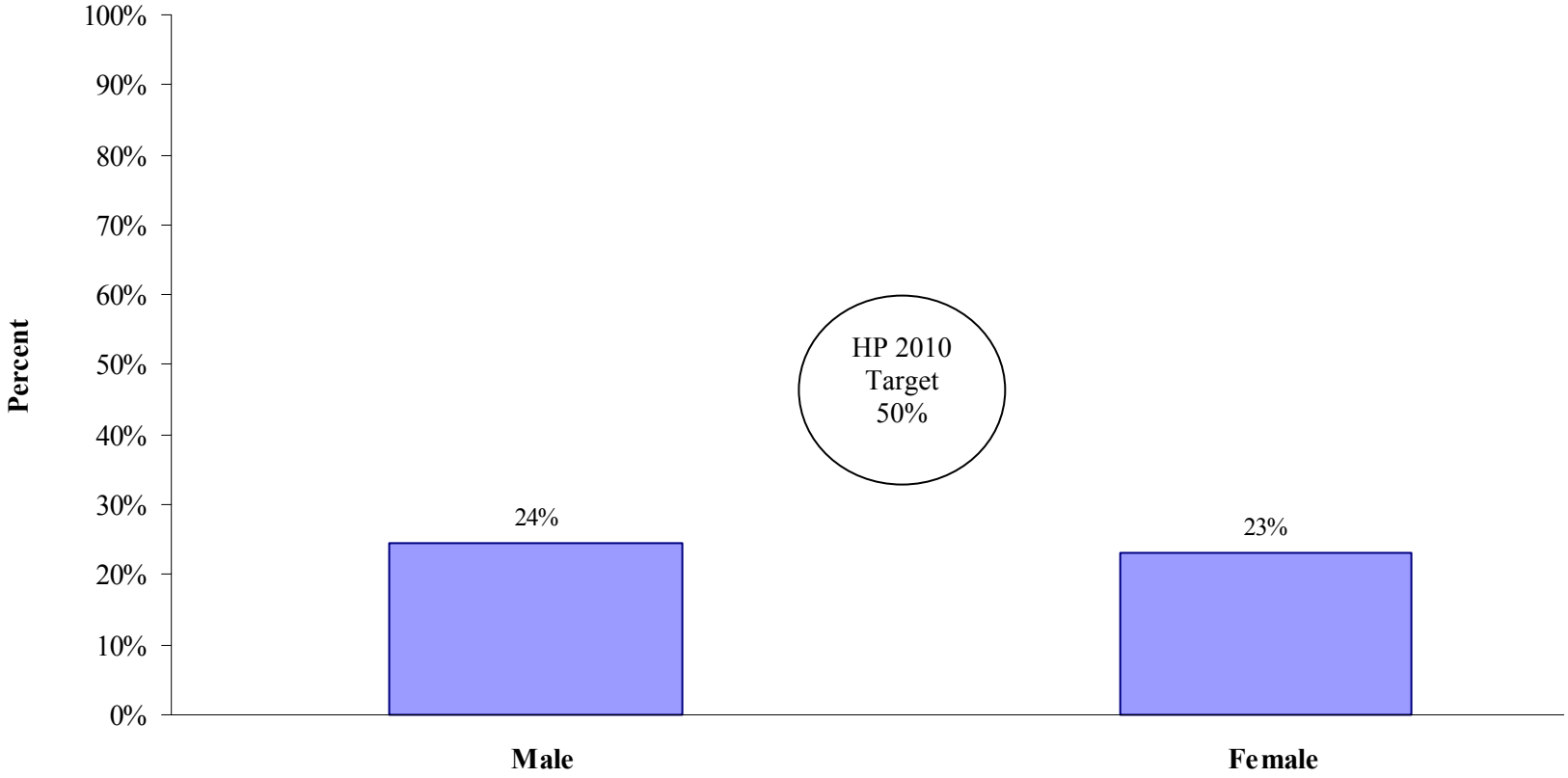


Objective: 22-2 Increase the proportion of adults who engage regularly, preferably daily in moderate physical activity for at least 30 minutes per day

Sources: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1991-2000.

*Percentages are age-adjusted to the 2000 US Population.

Participation in Regular Physical Activity
Adutls 18+ years by Gender
MA (2000)

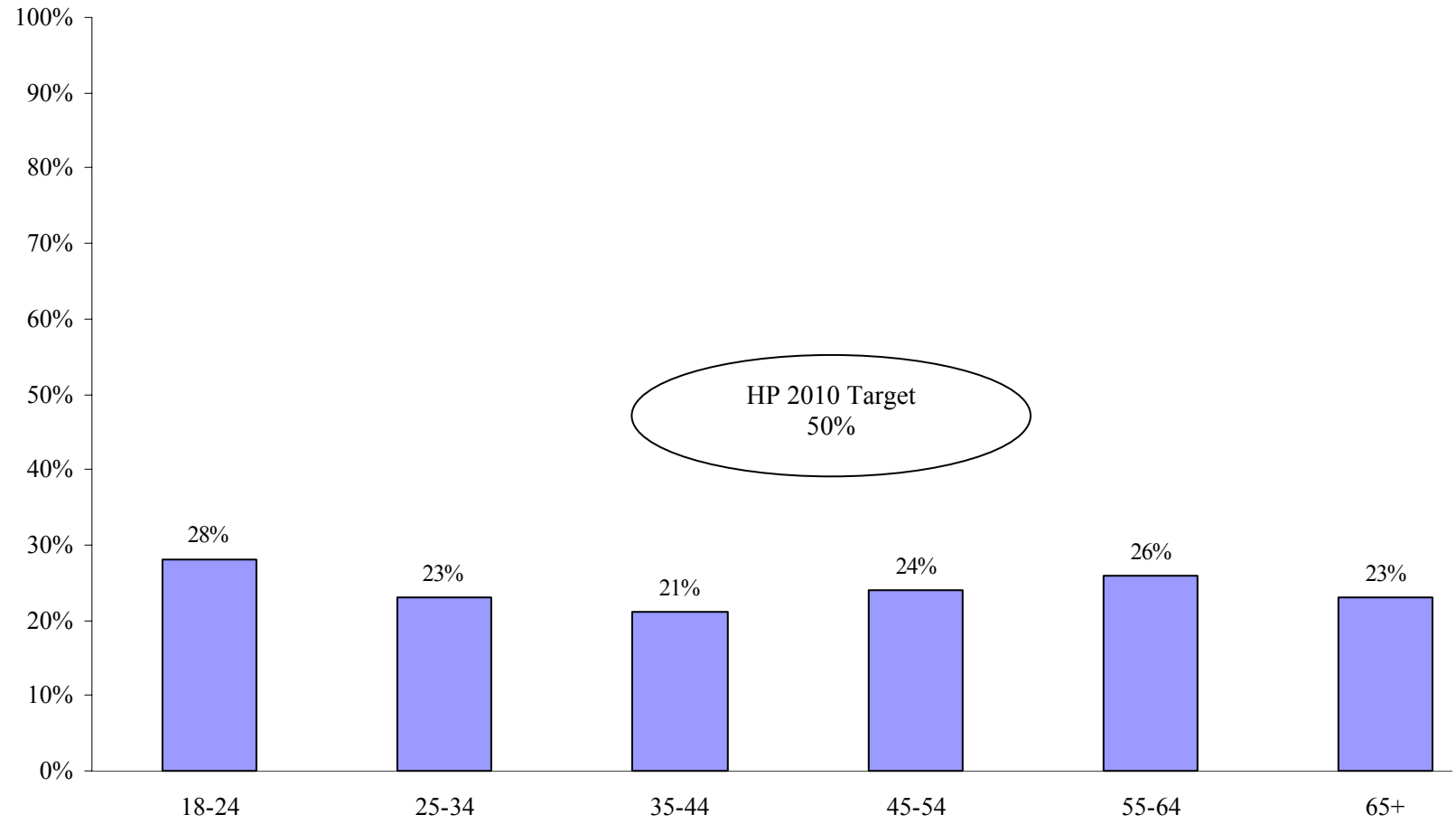


Objective: 22-2 Increase the proportion of adults who engage regularly, preferably daily in moderate physical activity for at least 30 minutes per day

Sources: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

*Percentages are age-adjusted to the 2000 US Population.

Participation in Regular Physical Activity
Adutls by age group
MA (2000)

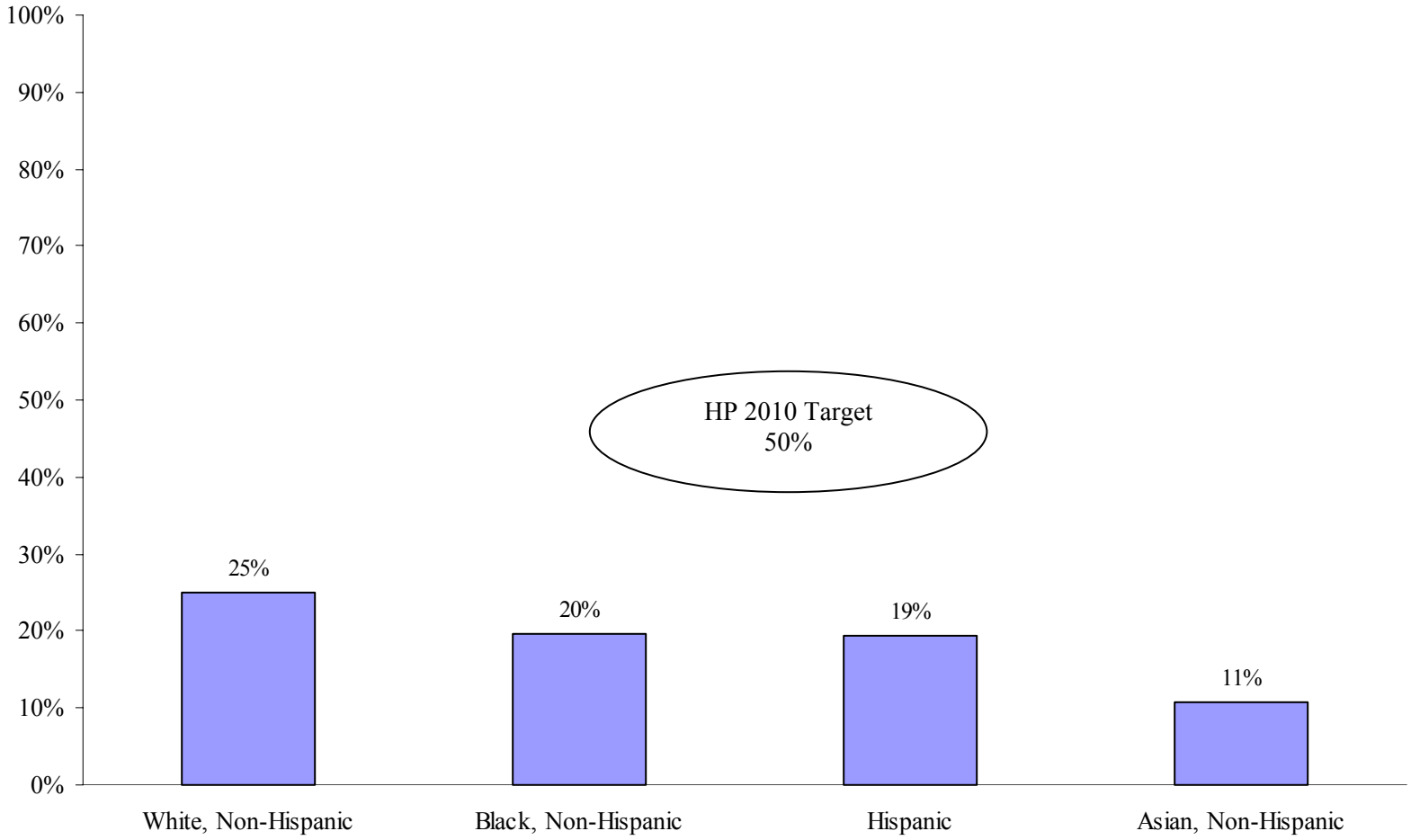


Sources: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

Objective: 22-2 Increase the proportion of adults who engage regularly, preferably daily in moderate physical activity for at least 30 minutes per day

Sources: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

Participation in Regular Physical Activity
Adutls by Race/Hispanic Ethnicity
MA (2000)



Objective: 22-2 Increase the proportion of adults who engage regularly, preferably daily in moderate physical activity for at least 30 minutes per day

Sources: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

*Percentages are age-adjusted to the 2000 US Population.

Overweight and obesity

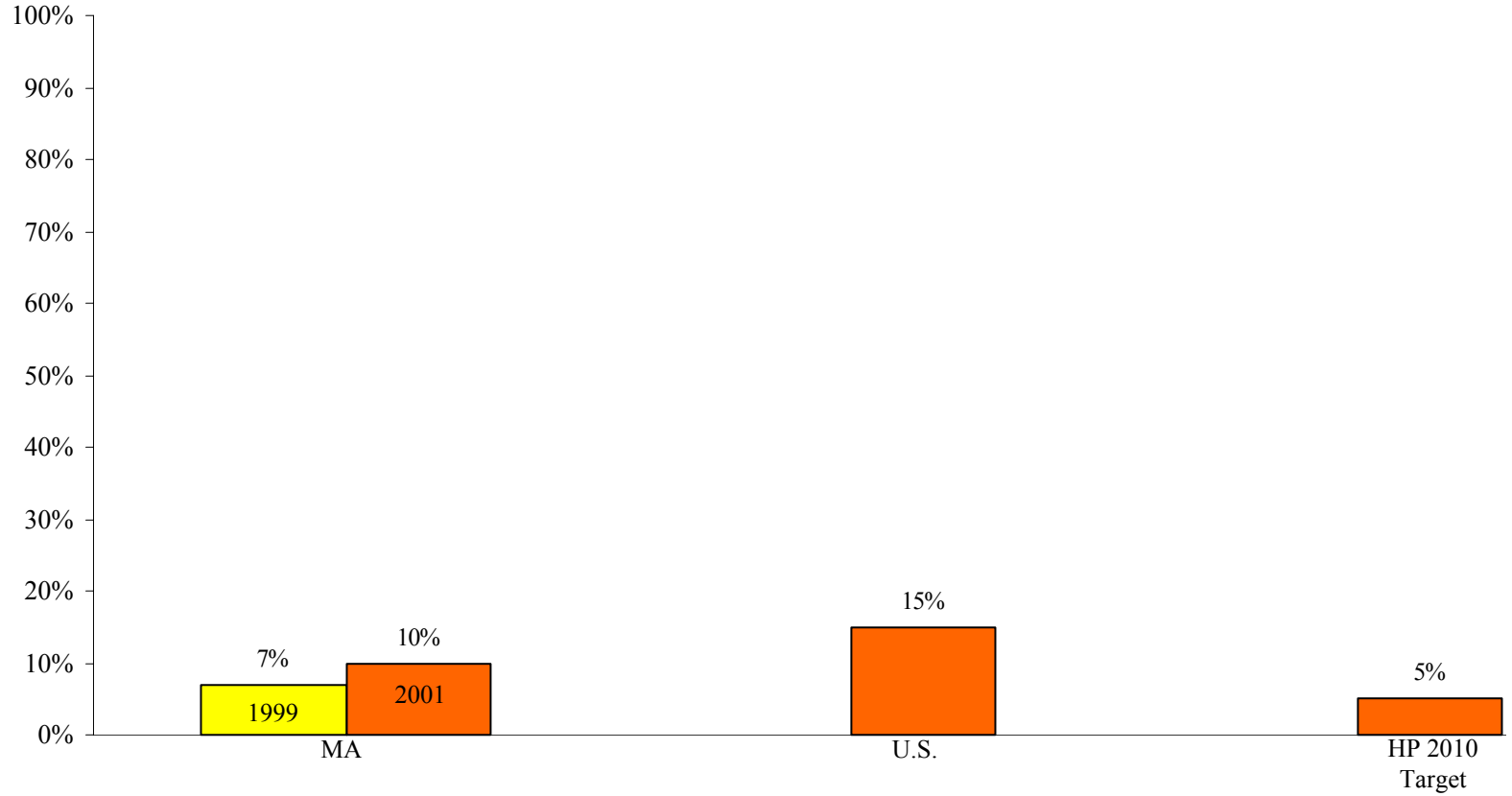
A note about this indicator:

The objectives selected to measure progress among children, adolescents, and adults for this Leading Health Indicator are presented below. These are only indicators and do not represent all the nutrition and overweight objectives included in Healthy People 2010.

19-3c. Reduce the proportion of children and adolescents who are overweight or obese.
19-2. Reduce the proportion of adults who are obese.

Data Sources: Behavioral Risk Factor Surveillance System (BRFSS) and the Youth Risk Behavior Survey (YRBS).

Overweight and Obesity
Adolescents
MA (1999[1], 2001[2]), U.S. (1999-2000), HP 2010



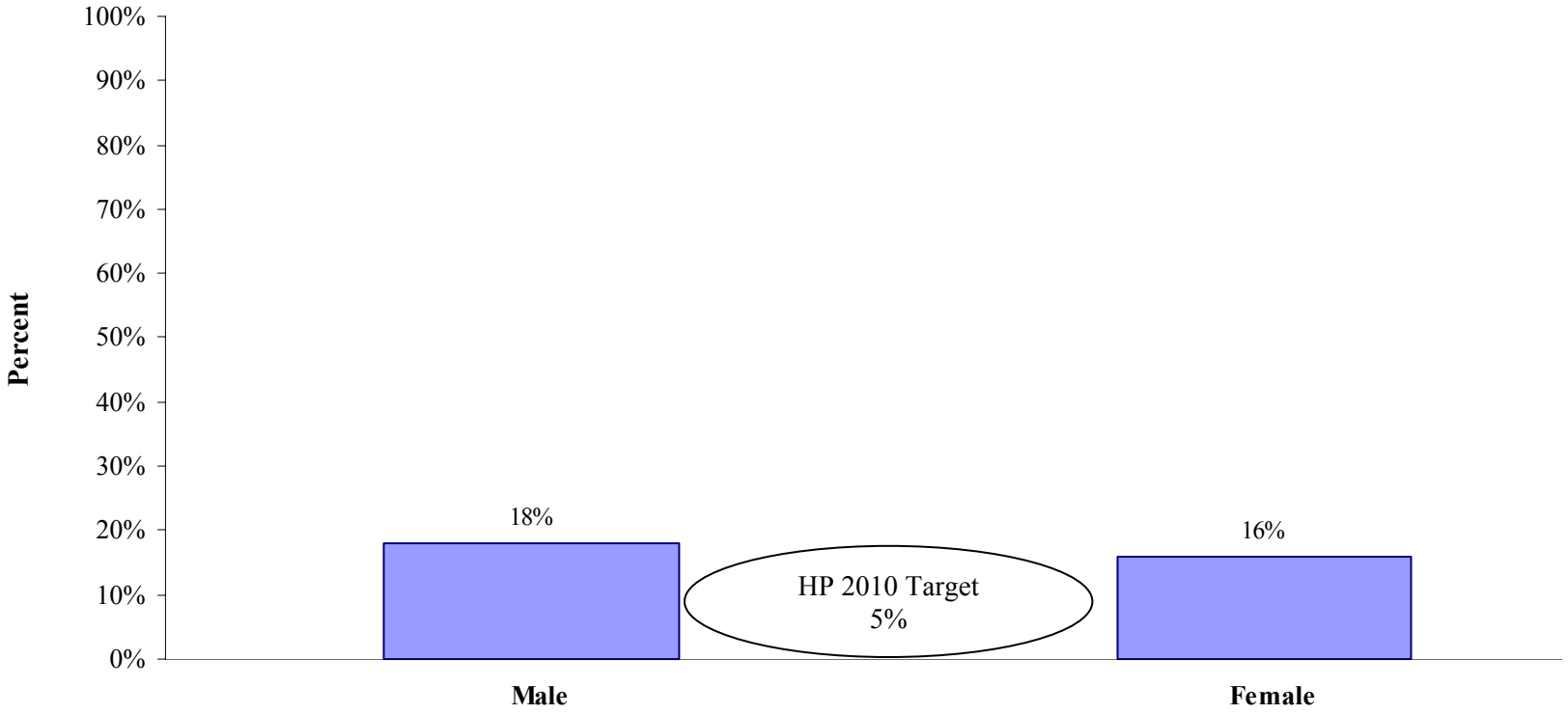
Objective: 19-3c Reduce the proportion of children and adolescents who are overweight or obese

In those aged 6-19 yrs, overweight or obesity is defined as at or above the sex- and age- specific 95th percentile of Body Mass Index (BMI) based on a preliminary analysis of data used to construct the 2000 U.S. Growth Charts (provisional data).

Sources: Centers for Disease Control and Prevention. National Center for Health Statistics. National Health and Nutrition Examination Survey. 1988-1994.
Massachusetts Department of Education. Youth Risk Behavior Survey. 1999, 2001.

[1,2] Since 1999, the YRBS has asked students to report actual height and weight, thus permitting calculation of BMI (1999: 15% at risk of becoming overweight and 7% definitely overweight; 2001: 15% at risk of becoming overweight and 10% definitely overweight).
Note: MA has no identified sources of data on overweight and obesity in children.

Overweight and obesity
Adolescents by Gender
MA (2001)



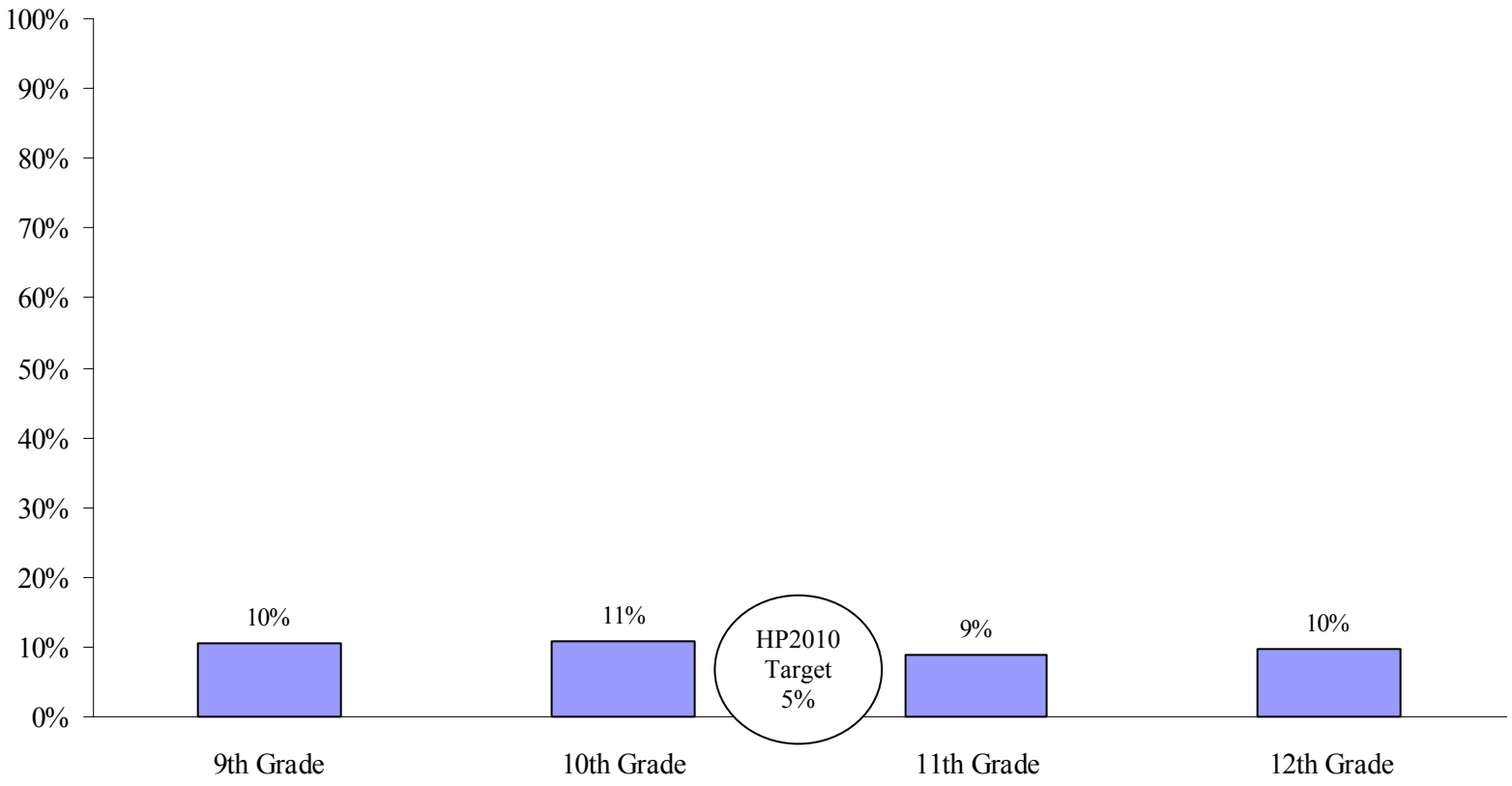
Objective: 19-3c Reduce the proportion of children and adolescents who are overweight or obese

In those aged 6-19 yrs, overweight or obesity is defined as at or above the sex- and age- specific 95th percentile of Body Mass Index (BMI) based on a preliminary analysis of data used to construct the 2000 U.S. Growth Charts (provisional data).

Sources: Massachusetts Department of Education. Youth Risk Behavior Survey. 2001.

Since 1999, the YRBS has asked students to report actual height and weight, thus permitting calculation of BMI (2001: Risk of becoming overweight: 16.6% males and 13.2 females; 18% males and 16% females definitely overweight).

Overweight and obesity
Adolescents by Grade
MA (2001)



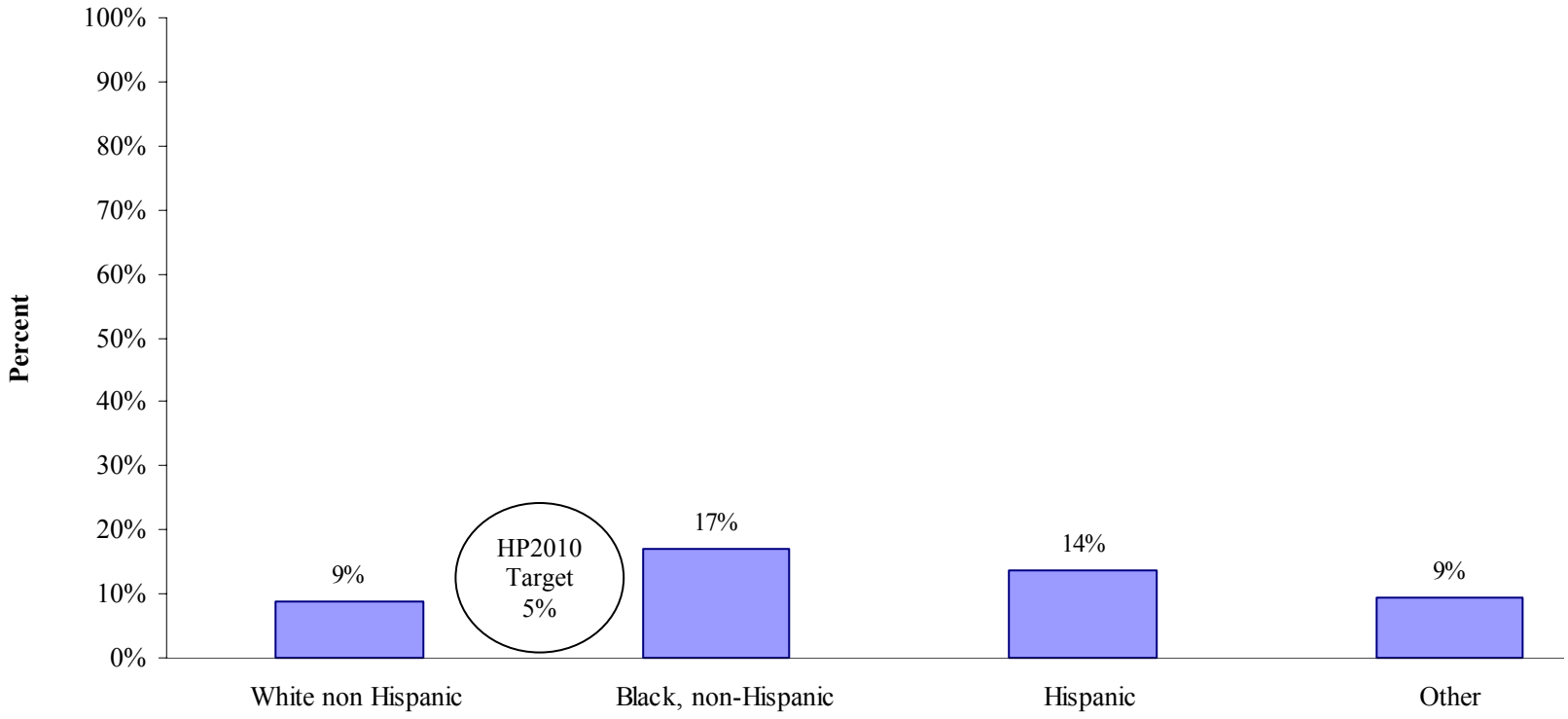
Objective: 19-3c Reduce the proportion of children and adolescents who are overweight or obese

In those aged 6-19 yrs, overweight or obesity is defined as at or above the sex- and age- specific 95th percentile of Body Mass Index (BMI) based on a preliminary analysis of data used to construct the 2000 U.S. Growth Charts (provisional data).

Sources: Massachusetts Department of Education. Youth Risk Behavior Survey. 2001.

Since 1999, the YRBS has asked students to report actual height and weight, thus permitting calculation of BMI .

Overweight and obesity
Adolescents by Race/Hispanic Ethnicity
MA (2001)



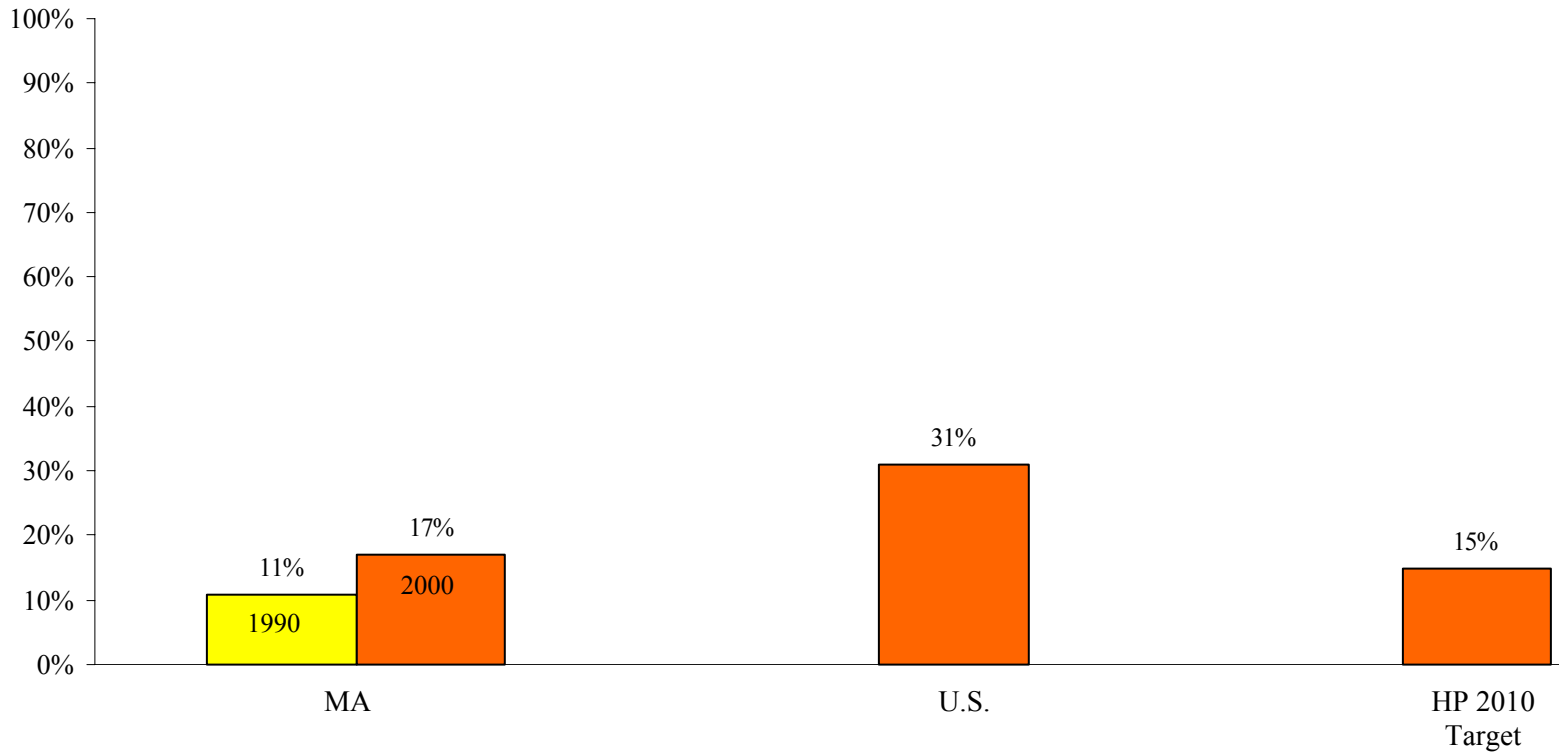
Objective: 19-3c Reduce the proportion of children and adolescents who are overweight or obese

In those aged 6-19 yrs, overweight or obesity is defined as at or above the sex- and age- specific 95th percentile of Body Mass Index (BMI) based on a preliminary analysis of data used to construct the 2000 U.S. Growth Charts (provisional data).

Sources: Massachusetts Department of Education. Youth Risk Behavior Survey. 1999, 2001.

Since 1999, the YRBS has asked students to report actual height and weight, thus permitting calculation of BMI (1999: 15% at risk of becoming overweight and 7% definitely overweight; 2001: 15% at risk of becoming overweight and 10% definitely overweight).

Percentage* of Adults who are Obese, Persons Ages 20+ years MA (1990, 2000), U.S. (1999-2000), HP2010



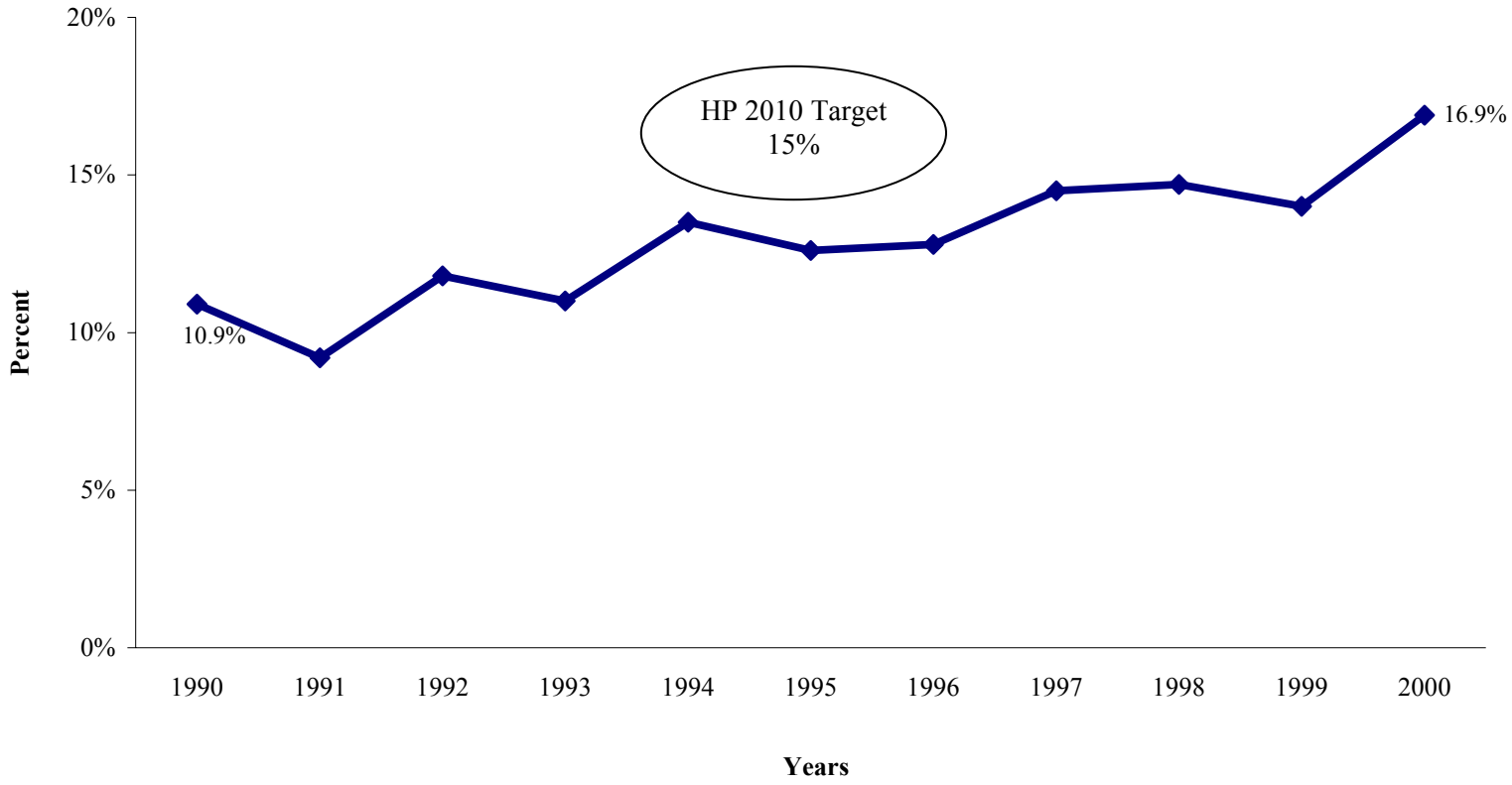
Objective: 19-2 Reduce the proportion of adults who are obese

In adults, obesity is defined as a of Body Mass Index (BMI) of 30 kg/m2 or more; overweight is a BMI of 25 kg/m2 or more. BMI is calculated as weight in kilograms (kg) divided by the square of height in meters (m2).

Sources: Centers for Disease Control and Prevention. National Center for Health Statistics. National Health and Nutrition Examination Survey. 1999. Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1990, 2000.

*Percentages are age-adjusted to the 2000 US Population. Because many objectives in HP 2010 have outcomes that vary by age, data for a number of objectives are adjusted to control for differences due only to differences in age composition.

Percentage* of Adults who are Obese,
Persons Ages 20+ years
MA (1990-2000)



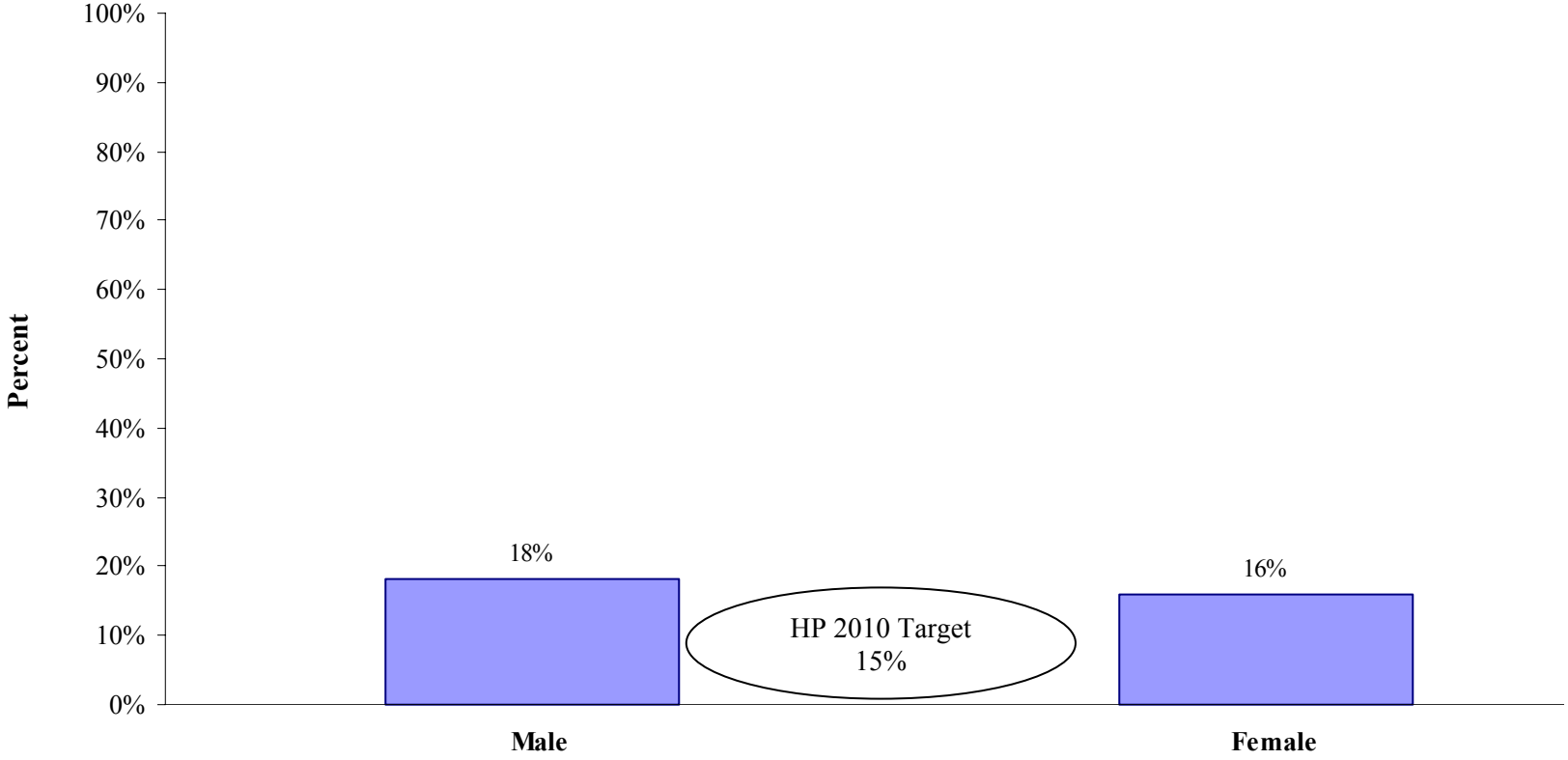
Objective: 19-2 Reduce the proportion of adults who are obese

In adults, obesity is defined as a of Body Mass Index (BMI) of 30 kg/m2 or more; overweight is a BMI of 25 kg/m2 or more. BMI is calculated as weight in kilograms (kg) divided by the square of height in meters (m2).

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1990-2000.

*Percentages are age-adjusted to the 2000 US Population.

Percentage* of Adults who are Obese, Persons Ages 20+ years by Gender MA (2000)



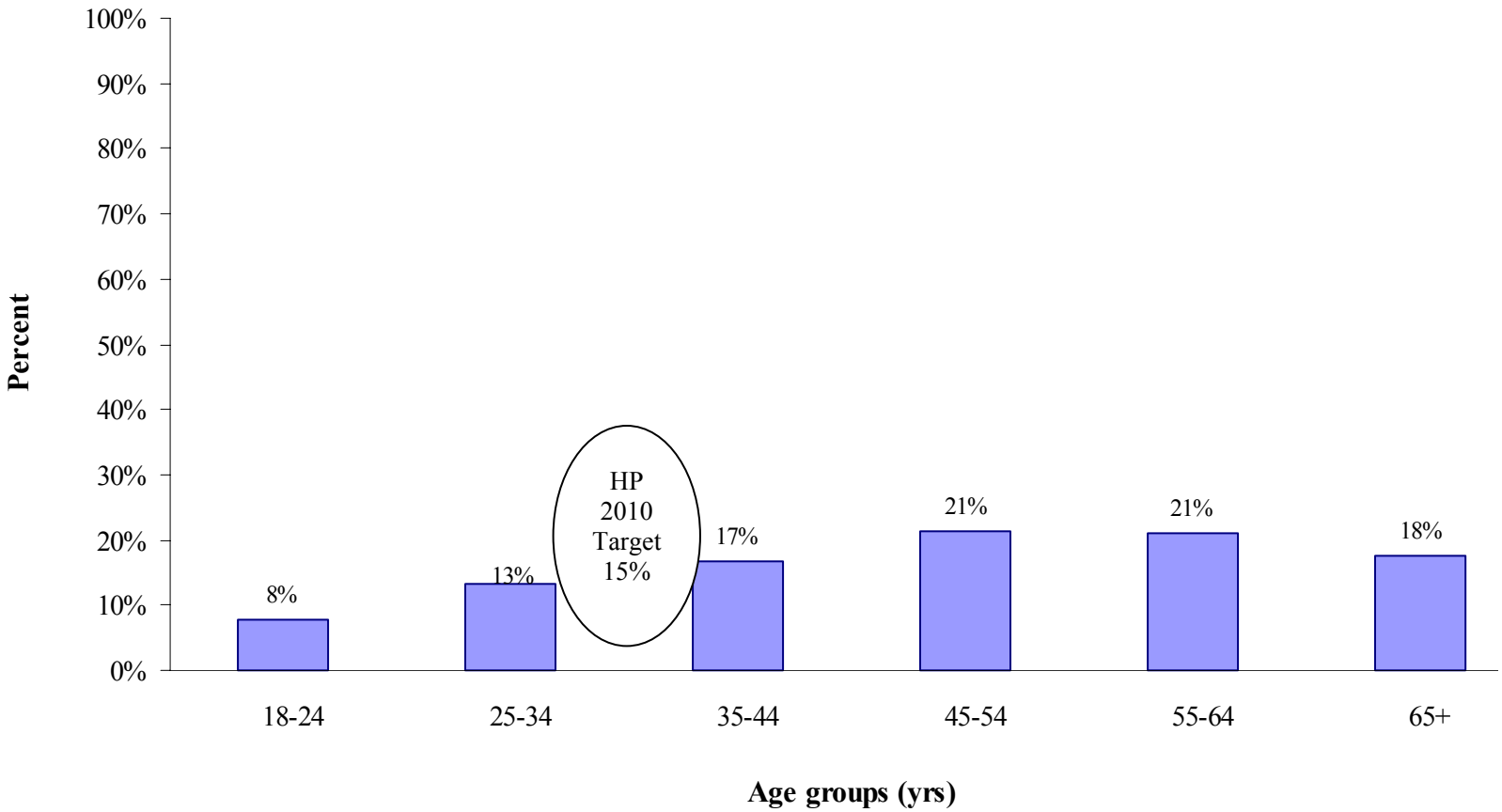
Objective: 19-2 Reduce the proportion of adults who are obese

In adults, obesity is defined as a of Body Mass Index (BMI) of 30 kg/m2 or more; overweight is a BMI of 25 kg/m2 or more. BMI is calculated as weight in kilograms (kg) divided by the square of height in meters (m2).

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

*Percentages are age-adjusted to the 2000 US Population.

Percentage* of Adults who are Obese,
Persons Ages 20+ years by Age Group
MA (2000)



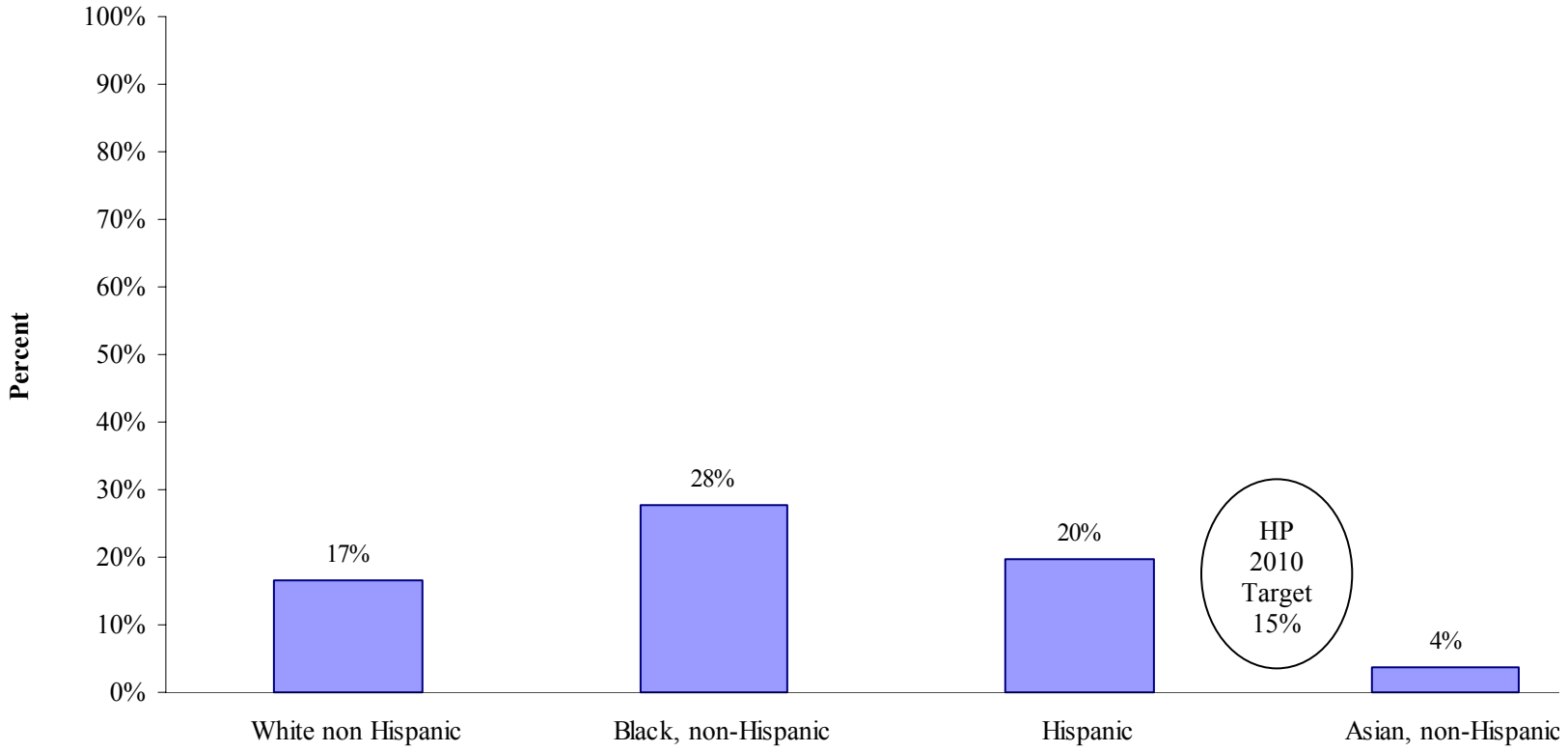
Objective: 19-2 Reduce the proportion of adults who are obese

In adults, obesity is defined as a of Body Mass Index (BMI) of 30 kg/m2 or more; overweight is a BMI of 25 kg/m2 or more. BMI is calculated as weight in kilograms (kg) divided by the square of height in meters (m2).

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

*Percentages are age-adjusted to the 2000 US Population..

Percentage* of Adults who are Obese, Persons Ages 20+ years by Race/Hispanic Ethnicity MA (2000)



Objective: 19-2 Reduce the proportion of adults who are obese

In adults, obesity is defined as a of Body Mass Index (BMI) of 30 kg/m2 or more; overweight is a BMI of 25 kg/m2 or more. BMI is calculated as weight in kilograms (kg) divided by the square of height in meters (m2).

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

*Percentages are age-adjusted to the 2000 US Population.

Tobacco Use

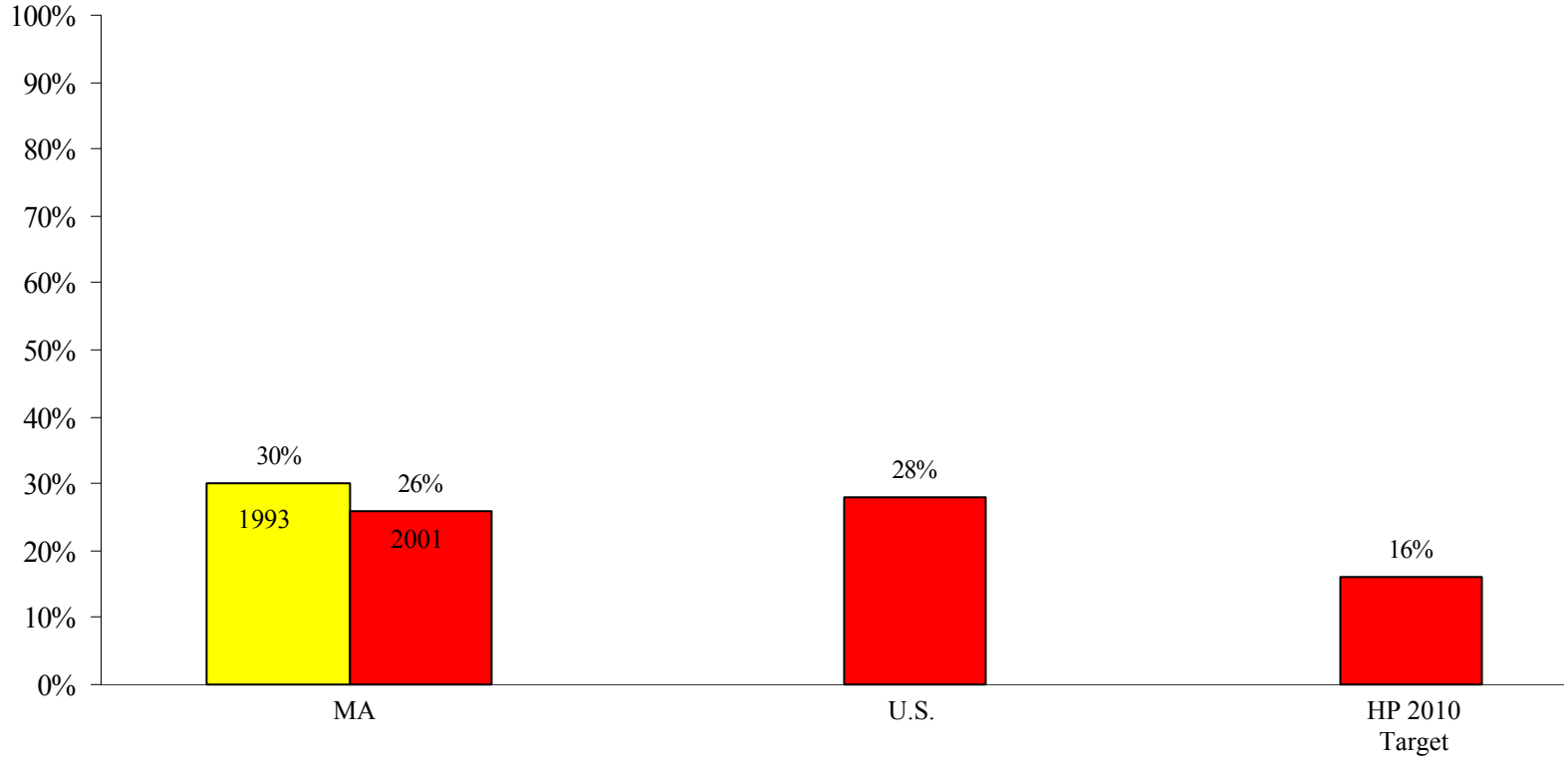
A note about this indicator:

The objectives selected to measure progress among adolescents and adults for this Leading Health Indicator are presented below. These are only indicators and do not represent all the tobacco use objectives included in Healthy People 2010.

27-3b. Reduce cigarette smoking by adolescents
27-1a. Reduce cigarette smoking by adults

Data Sources: Behavioral Risk Factor Surveillance System (BRFSS) and the Youth Risk Behavior Survey (YRBS).

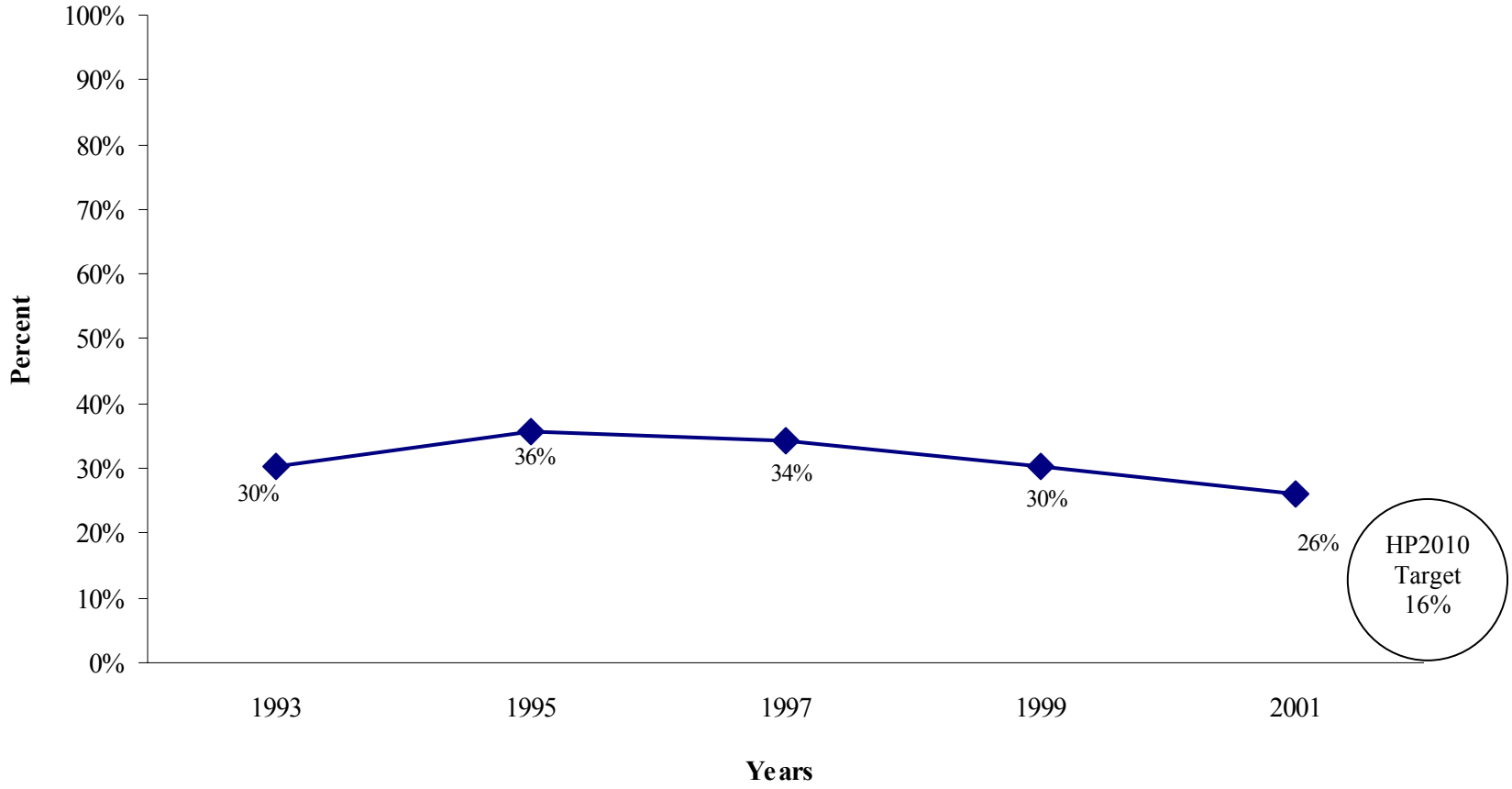
Current Cigarette Smoking
Adolescents
MA (1993, 2001), U.S. (2001), HP 2010



Objective: 27-2b Reduce cigarette smoking by adolescents

Sources: Centers for Disease Control and Prevention. National Center for Health Statistics. National Health and Nutrition Examination Survey. 2001.
Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 1993, 2001.

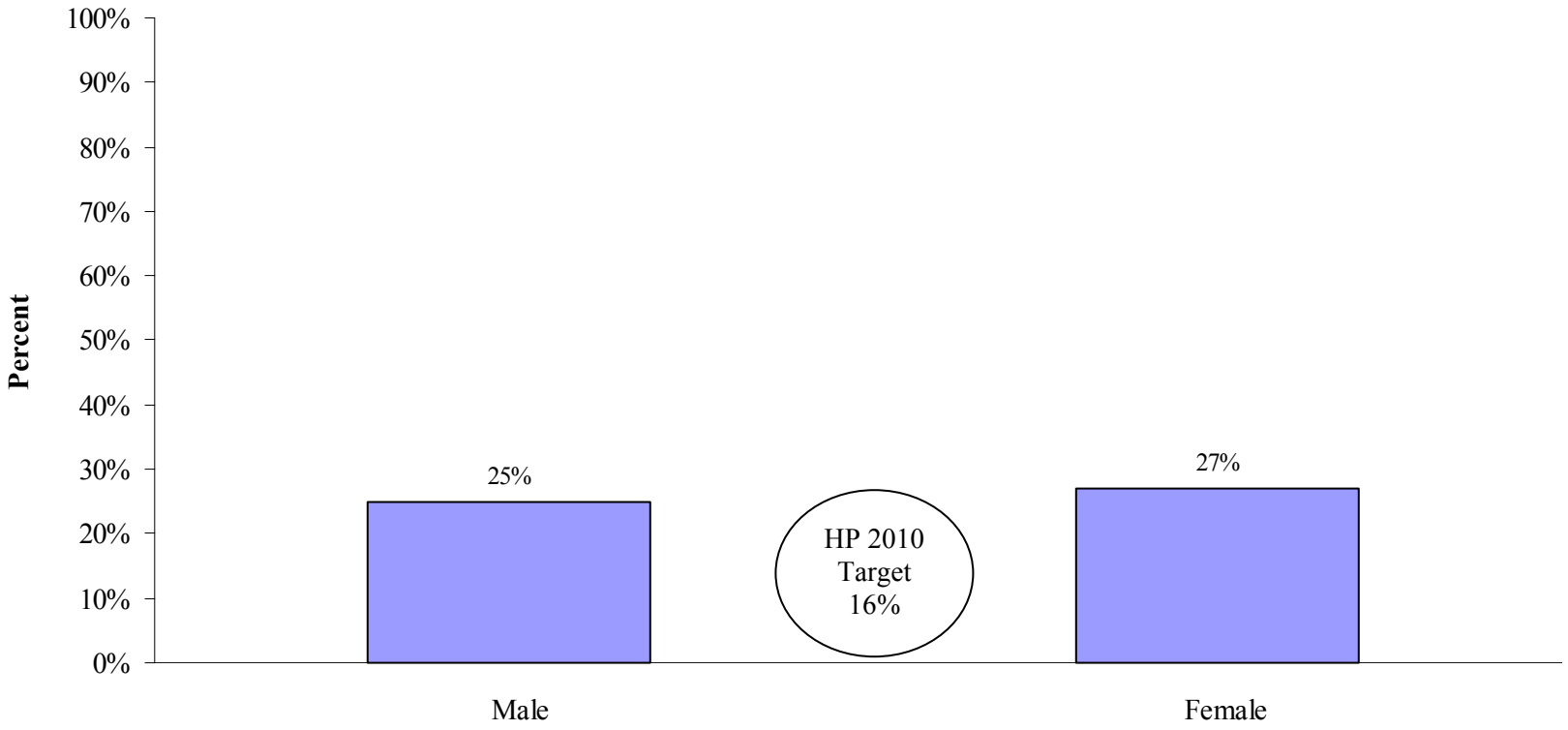
Current Cigarette Smoking
Adolescents
MA (1993-2001)



Objective: 27-2b Reduce cigarette smoking by adolescents

Source: Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 1993-2001.

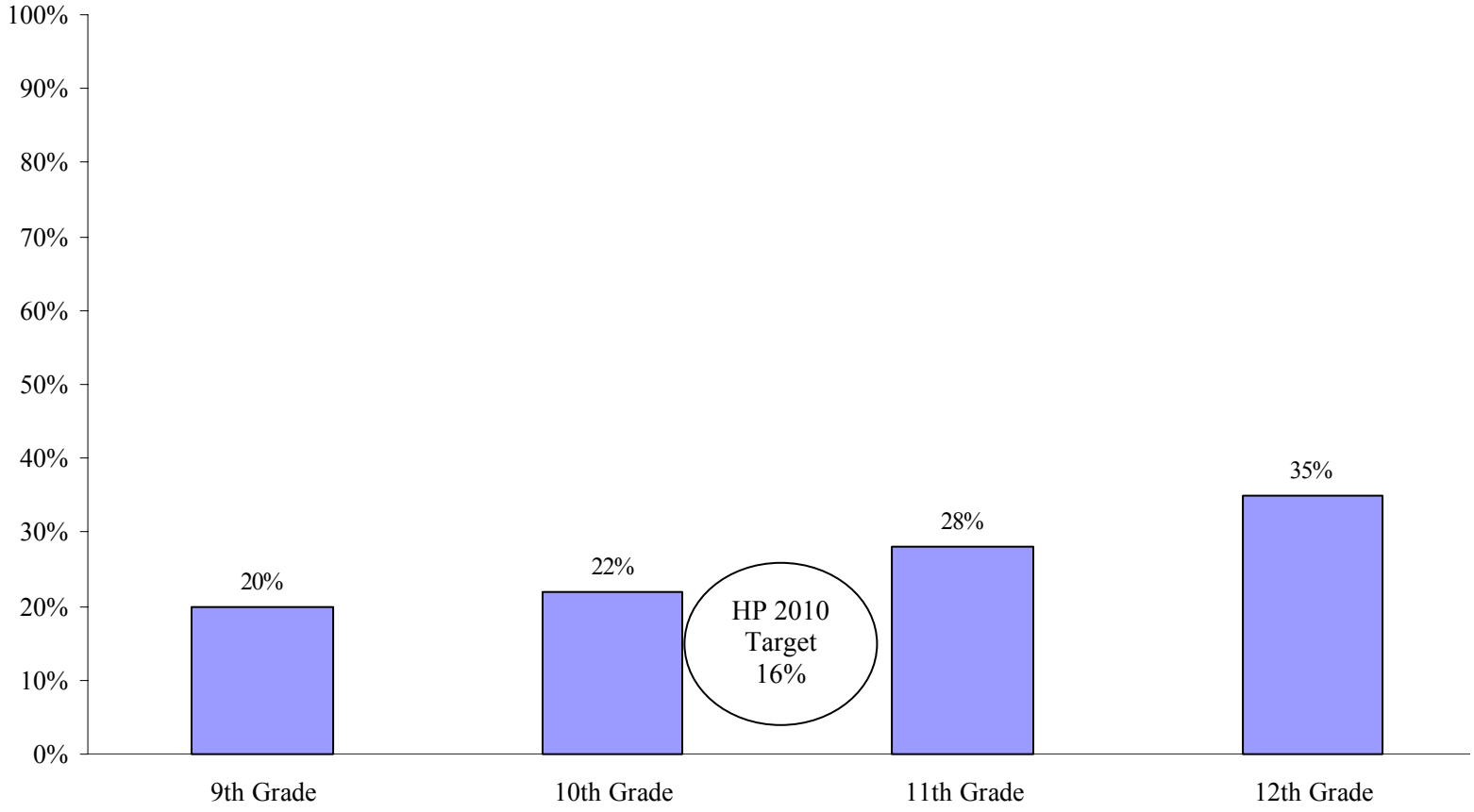
Current Cigarette Smoking
Adolescents by Gender
MA (2001)



Objective: 27-2b Reduce cigarette smoking by adolescents

Source: Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 2001.

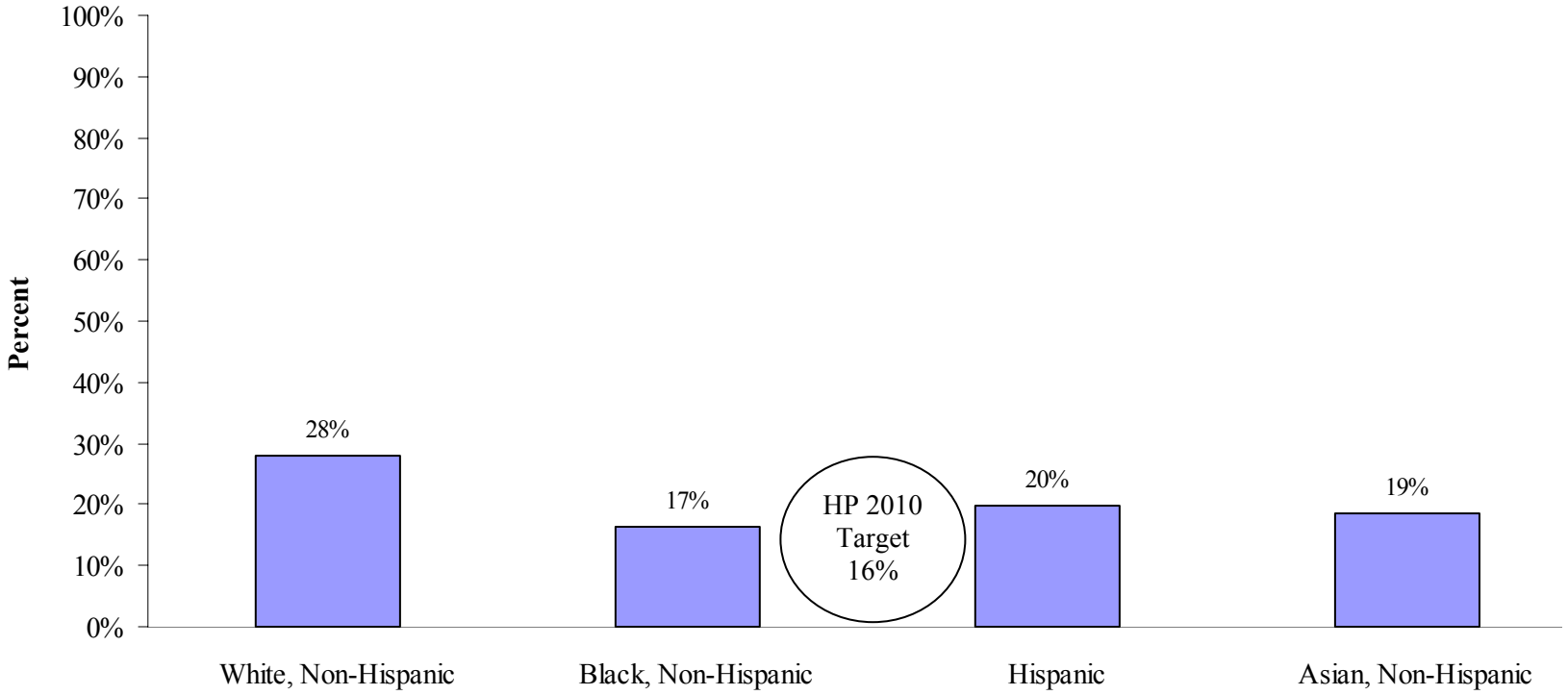
Current Cigarette Smoking
Adolescents by Grade
MA (2001)



Objective: 27-2b Reduce cigarette smoking by adolescents

Source: Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 2001.

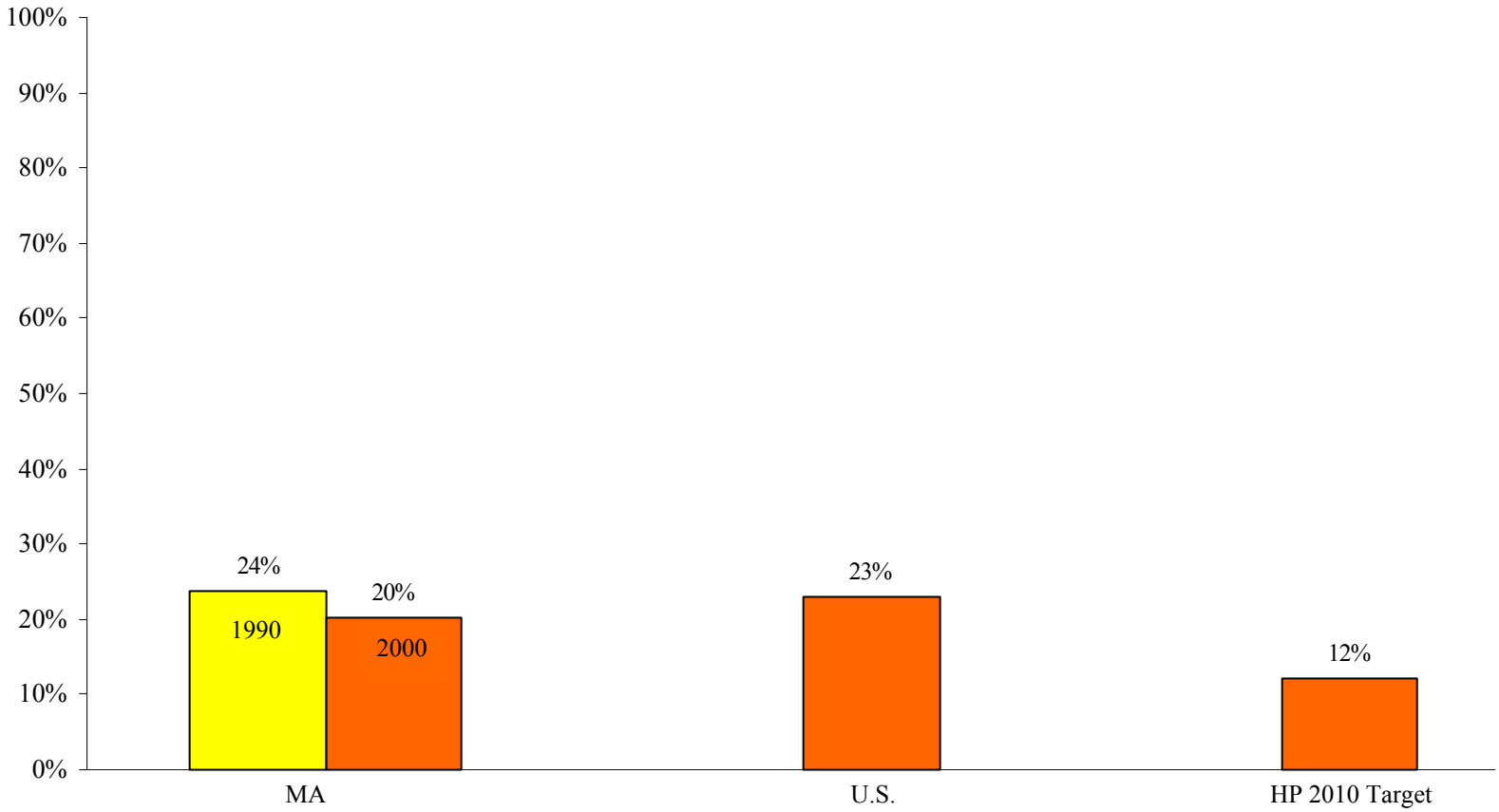
Current Cigarette Smoking
Adolescents by Race/Hispanic Ethnicity
MA (2001)



Objective: 27-2b Reduce cigarette smoking by adolescents

Source: Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 2001.

Current Cigarette Smoking,
Adults aged 18+ yrs
MA (1990, 2000), U.S. (2000), HP 2010

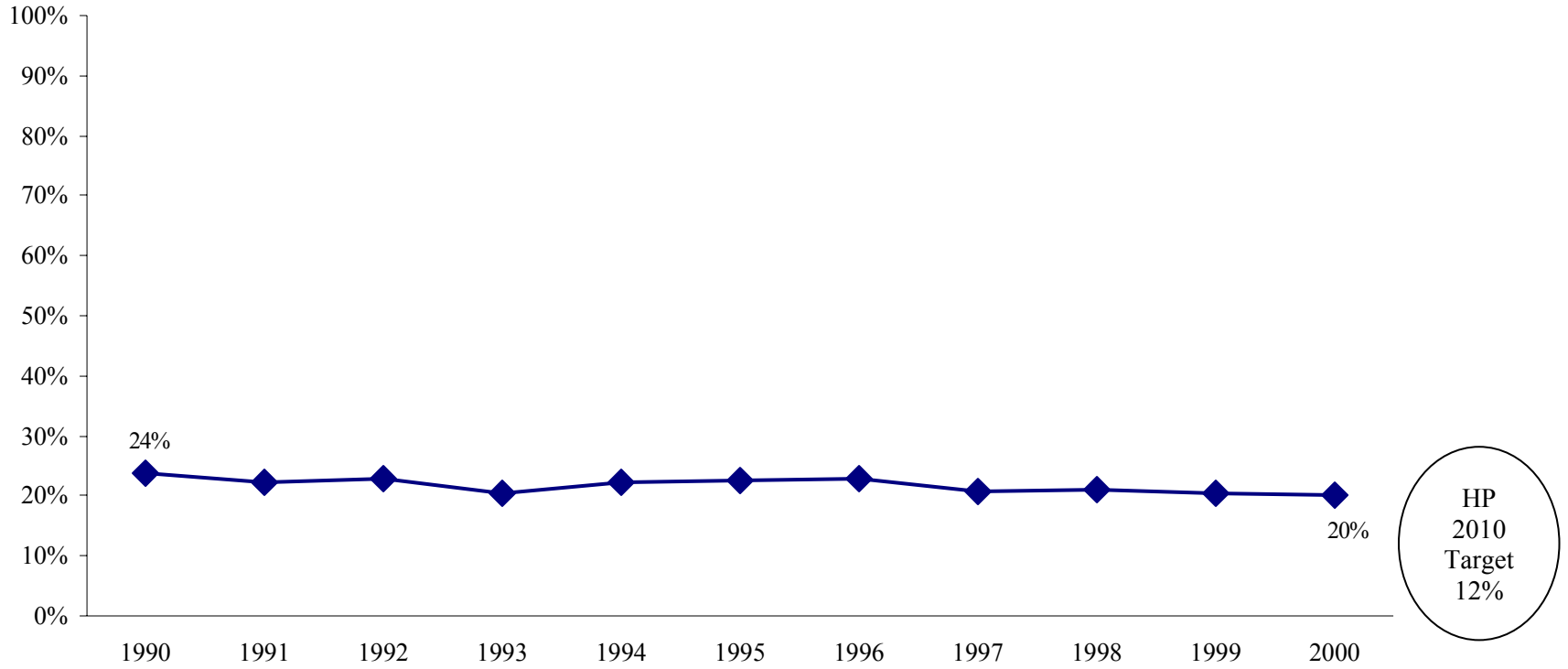


Objective: 27-1a Reduce cigarette smoking by adults

Sources: Centers for Disease Control and Prevention. National Center for Health Statistics. National Health and Nutrition Examination Survey. 2000.
Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1990, 2000.

*Percentages are age-adjusted to the 2000 US Population.

Percentage* of Adults who Currently Smoke
Adults aged 18+ yrs
MA (1990-2000)

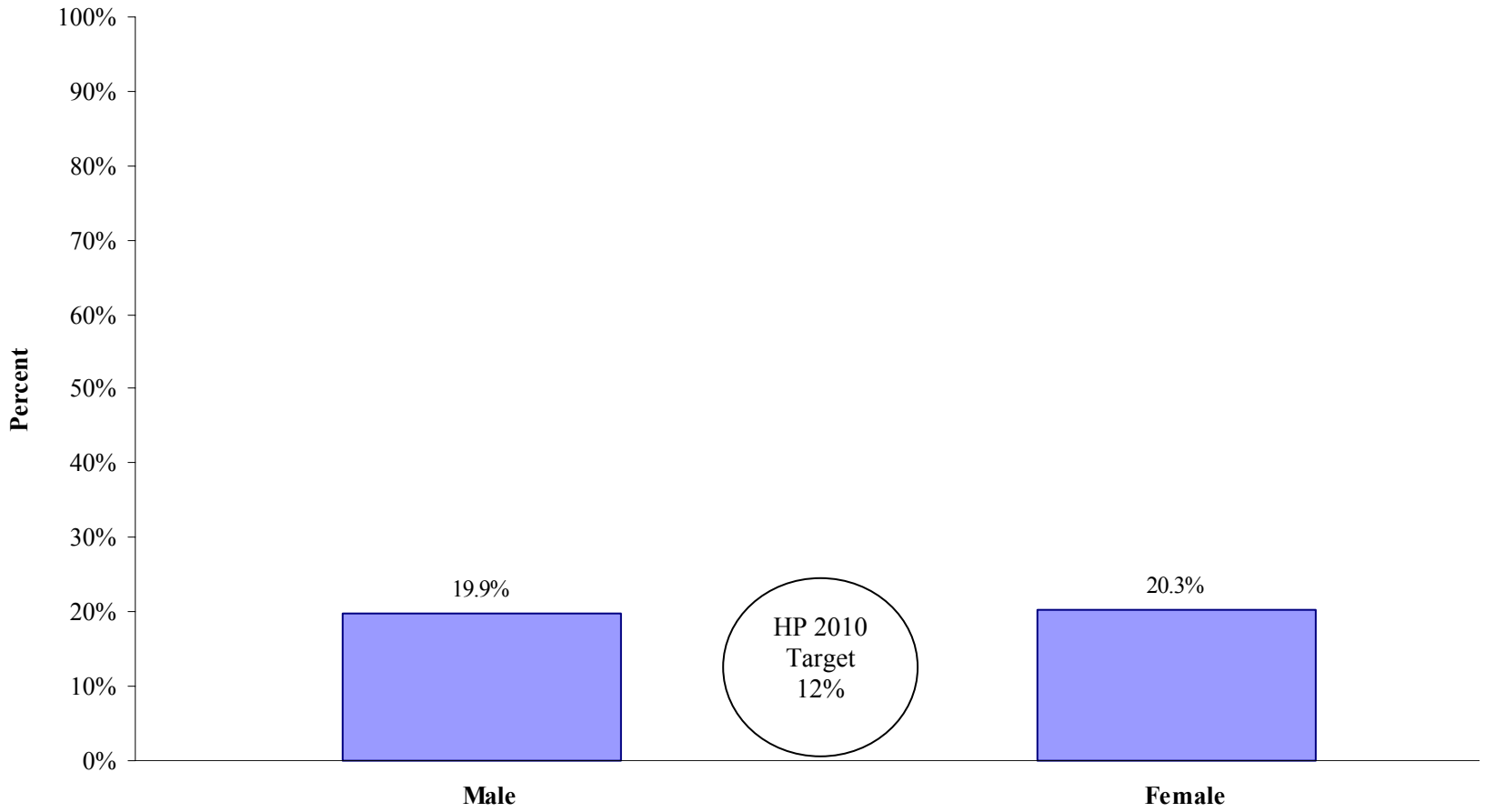


Objective: 27-1a Reduce cigarette smoking by adults

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1990-2000.

*Percentages are age-adjusted to the 2000 US Population.

Percentage* of Adults who Currently Smoke
Persons Ages 18+ years by Gender
MA (2000)

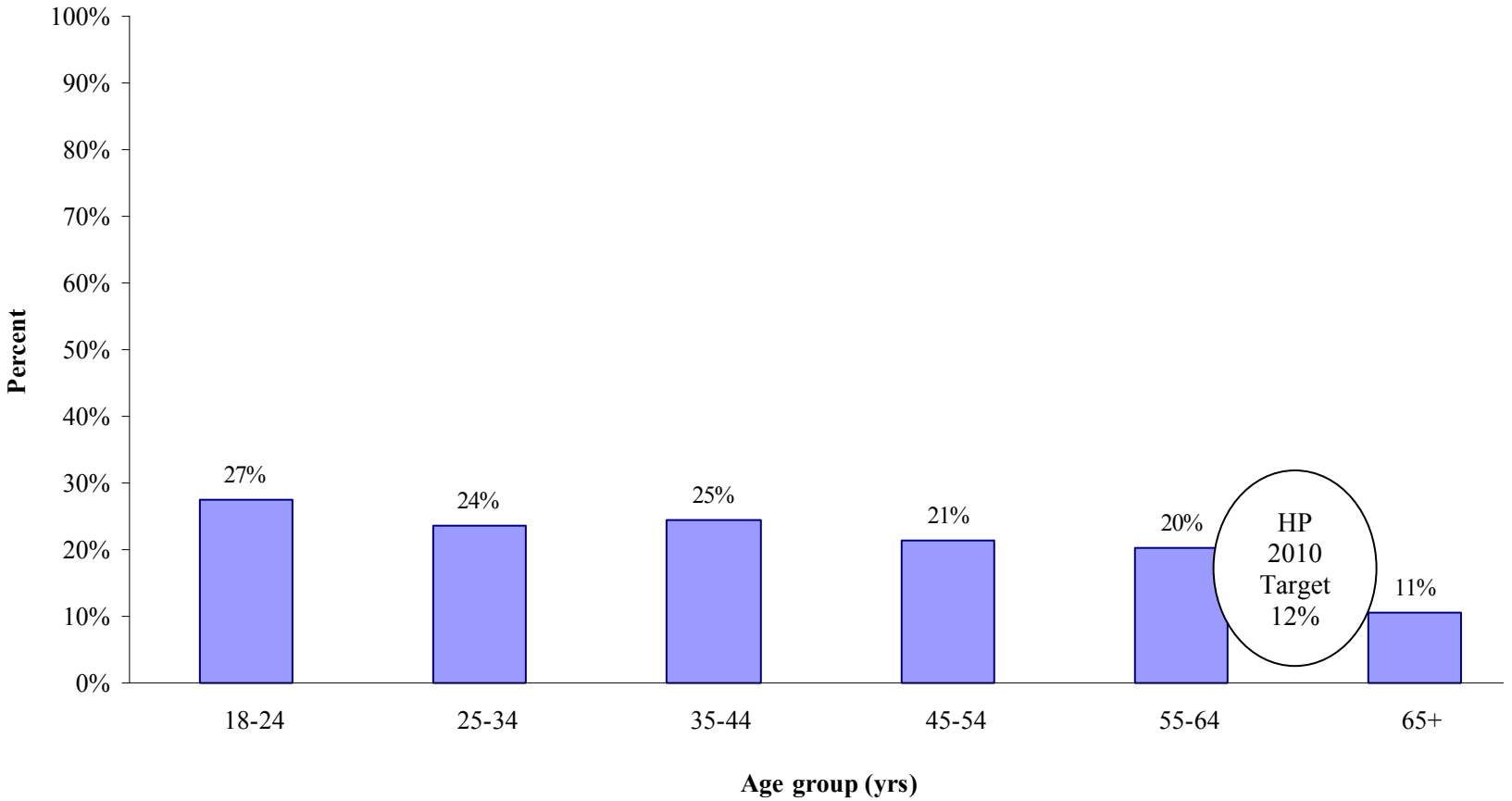


Objective: 27-1a Reduce cigarette smoking by adults

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

*Percentages are age-adjusted to the 2000 US Population.

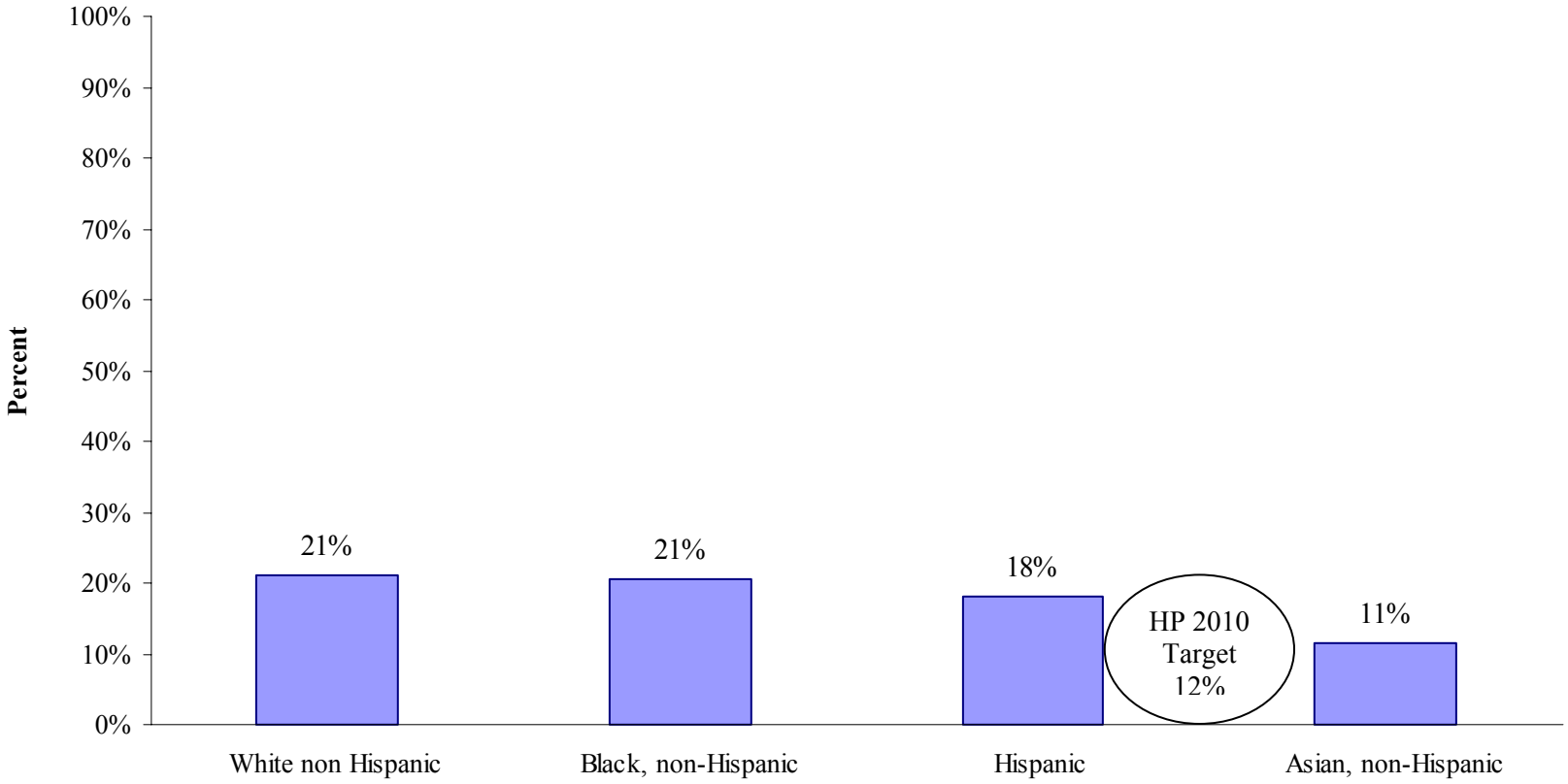
Percentage* of Adults who Currently Smoke
Persons Ages 18+ years by Age Group
MA (2000)



Objective: 27-1a Reduce cigarette smoking by adults

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

Percentage* of Adults who Currently Smoke
Persons Ages 18+ years by Race/Hispanic Ethnicity
MA (2000)



Objective: 27-1a Reduce cigarette smoking by adults

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

*Percentages are age-adjusted to the 2000 US Population.

Substance Abuse

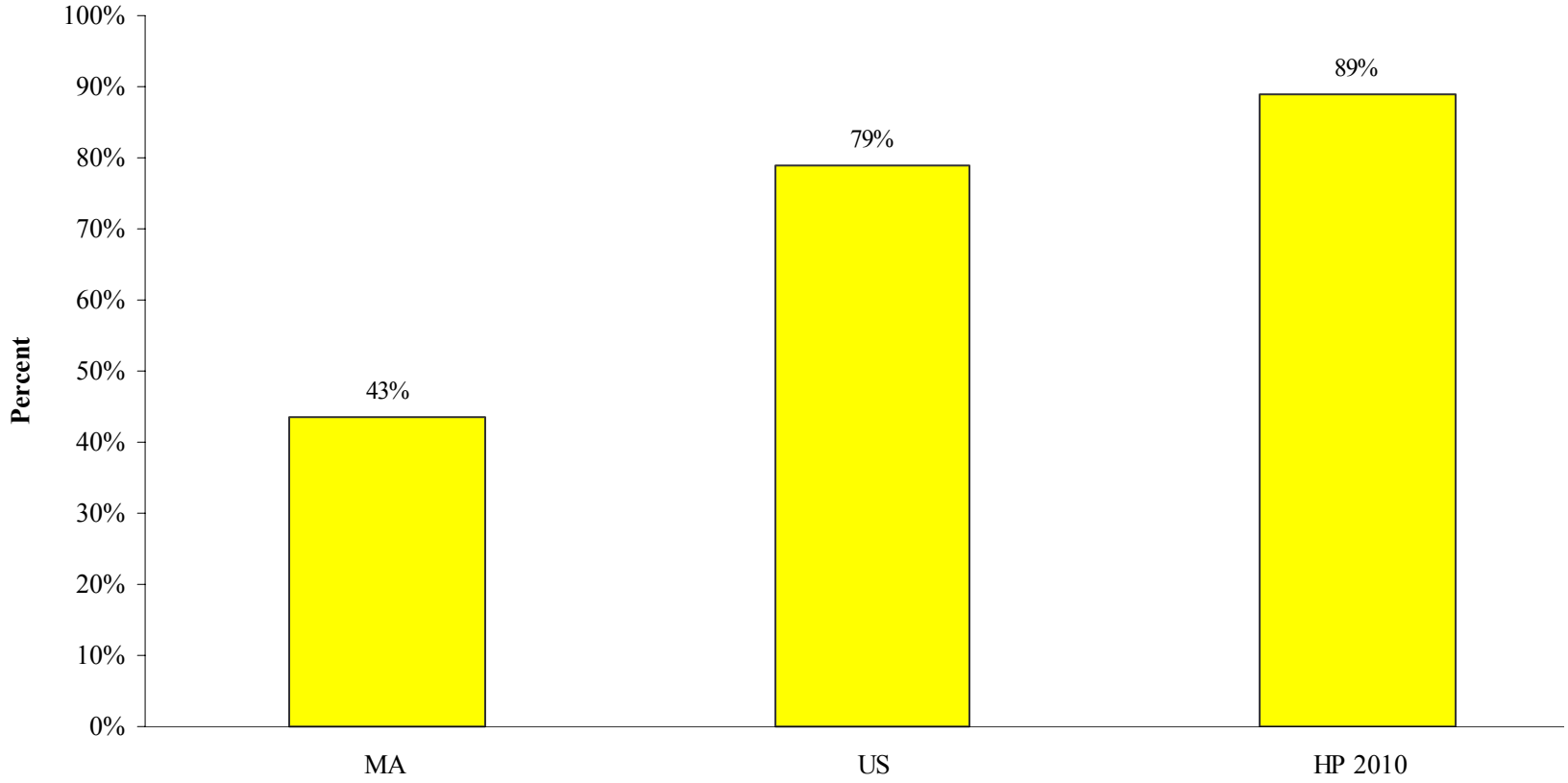
A note about this indicator:

The objectives selected to measure progress among adolescents and adults for this Leading Health Indicator are presented below. These are only indicators and do not represent all the substance abuse objectives included in Healthy People 2010.

26-10a. Increase the proportion of adolescents not using alcohol or any illicit drugs during the past 30 days.
26-10c. Reduce the proportion of adults using any illicit drug during the past 30 days.
26-11c. Reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month.

Data Sources: Behavioral Risk Factor Surveillance System (BRFSS) and the Youth Risk Behavior Survey (YRBS).

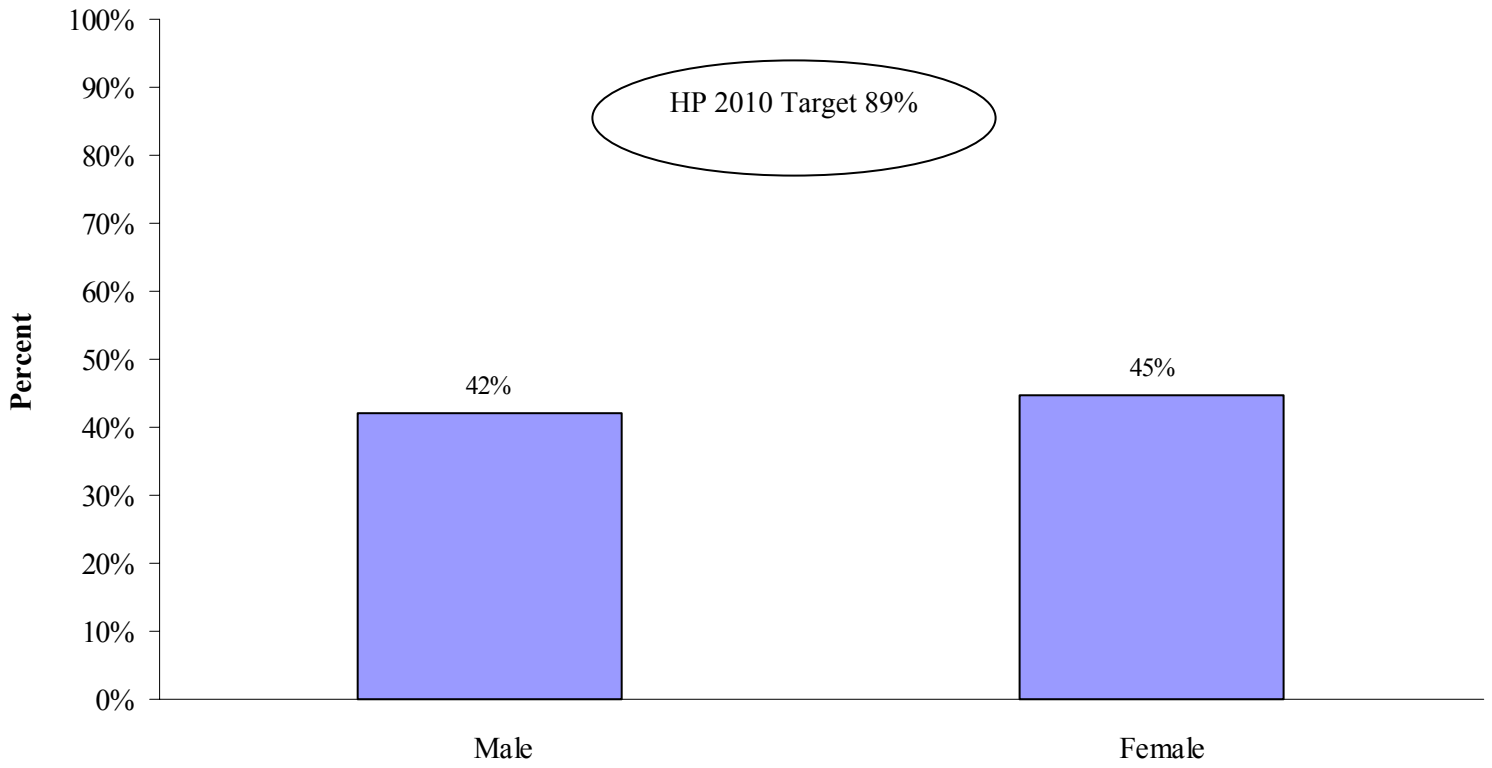
No alcohol and/or drugs in past 30 days
Adolescents (12-17 yrs)
MA (2001), U.S. (1998), HP 2010



Objective: 26-10a Increase the proportion of adolescents not using alcohol or illicit drugs during the past 30 days

Sources: Substance Abuse and Mental Health Services Administration, Office of the Assistant Secretary. National Household Survey on Drug Abuse. 1998.
Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS), 2001.

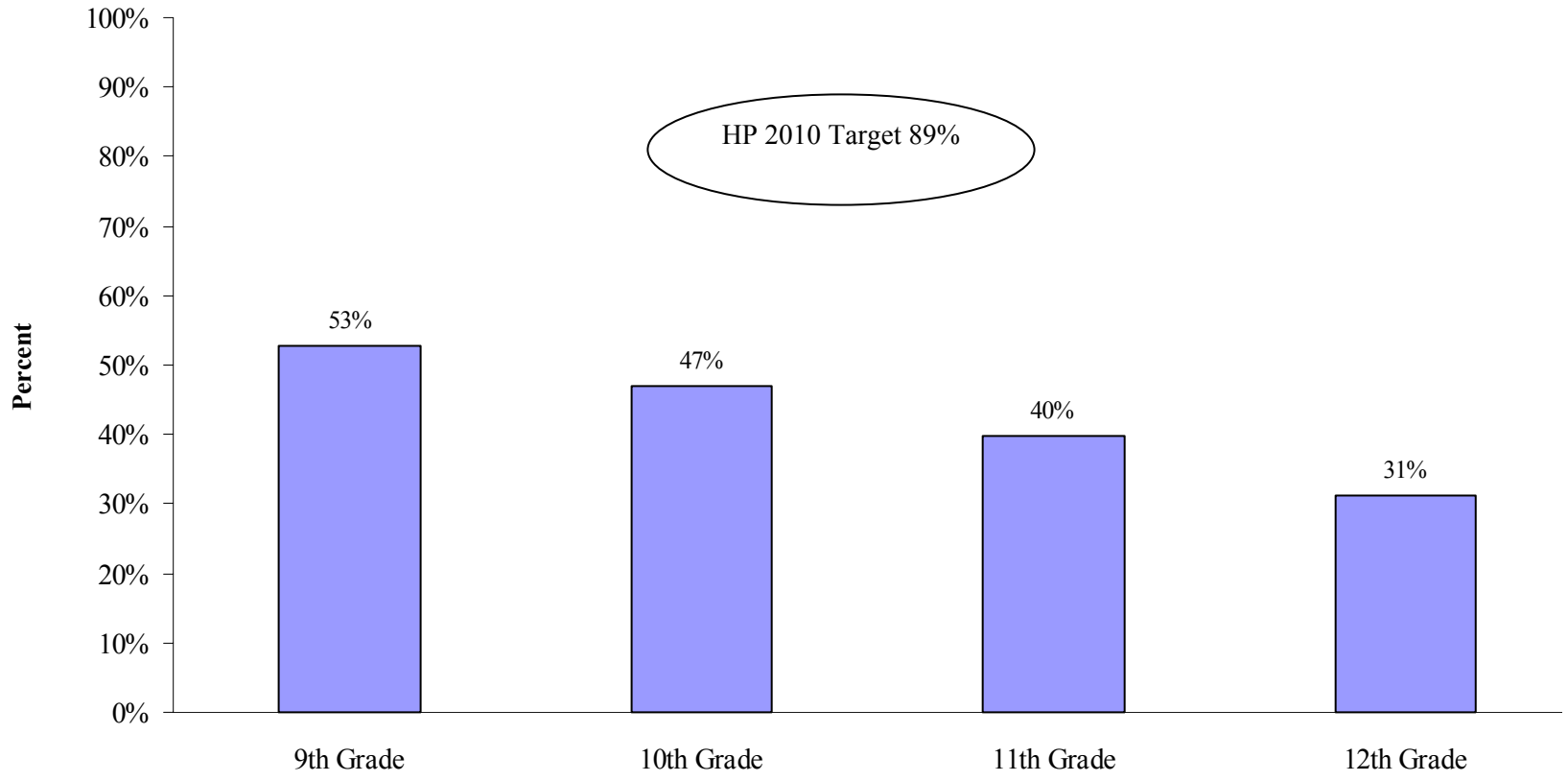
No alcohol and/or drugs in past 30 days
Adolescents (12-17 yrs) by Gender
MA (2001)



Objective: 26-10a Increase the proportion of adolescents not using alcohol or illicit drugs during the past 30 days

Source: Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 2001.

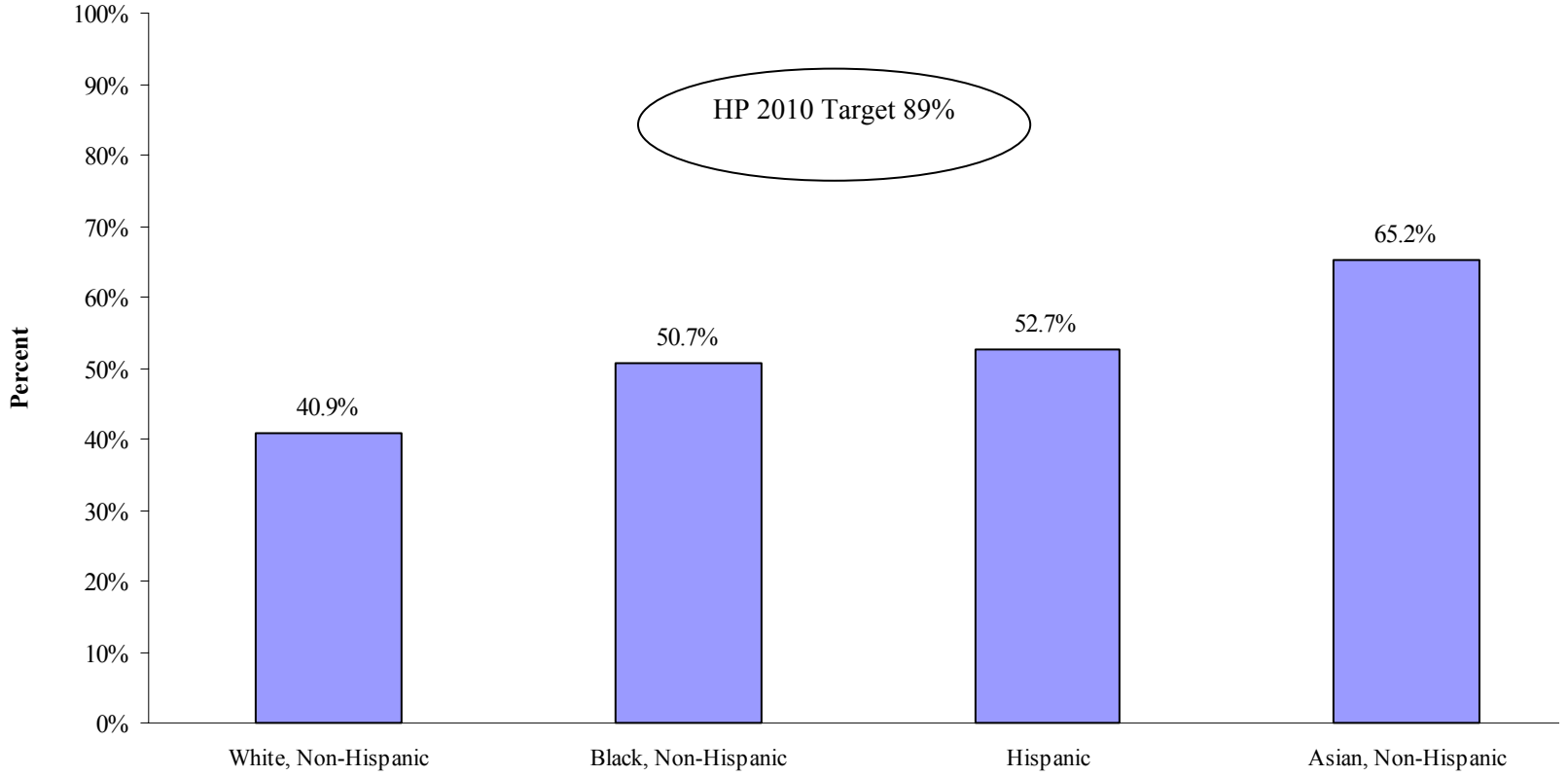
No alcohol and/or drugs in past 30 days
Adolescents (12-17 yrs) by Grade
MA (2001)



Objective: 26-10a Increase the proportion of adolescents not using alcohol or illicit drugs during the past 30 days

Source: Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 2001.

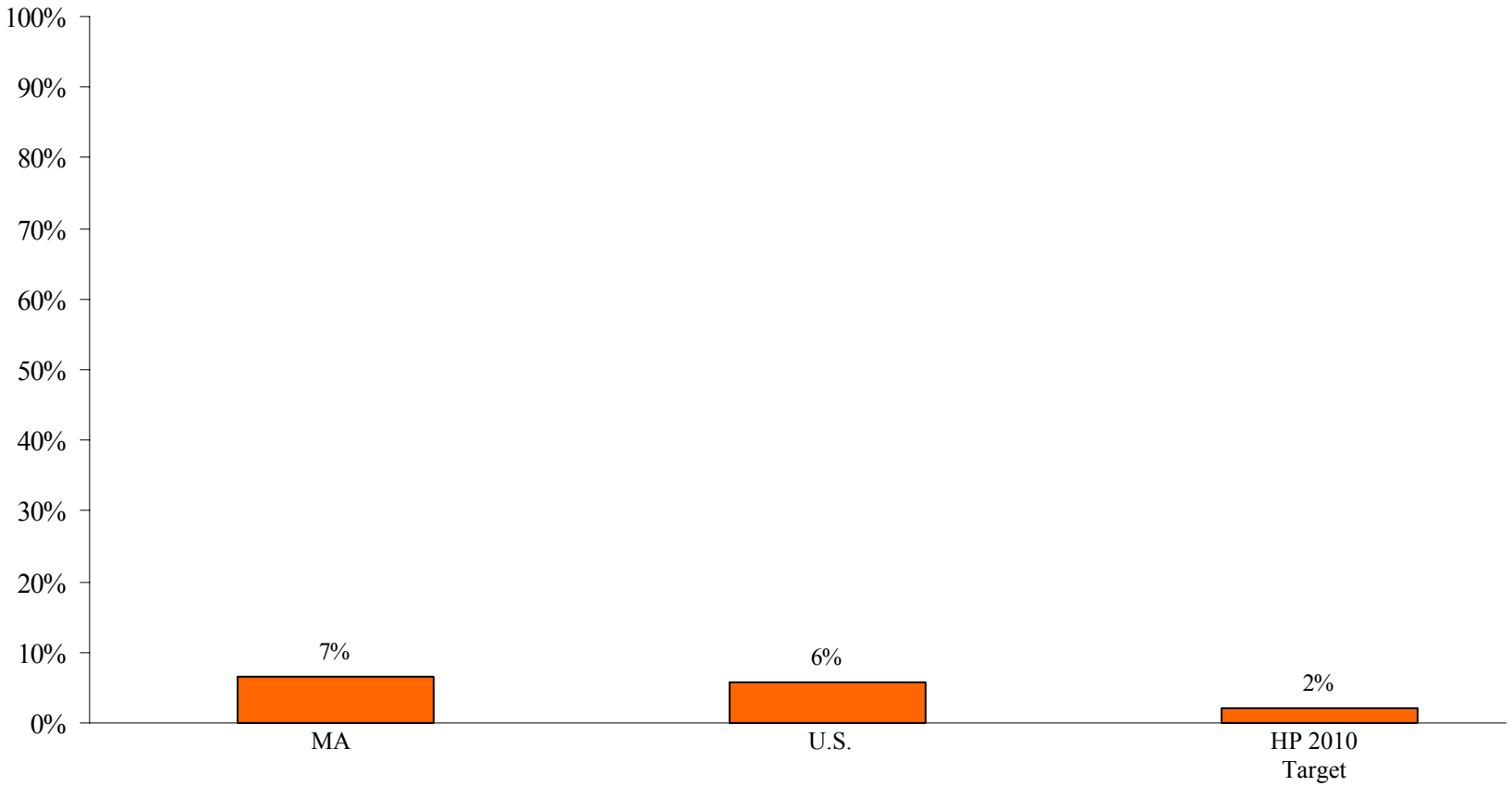
No alcohol and/or drugs in past 30 days
Adolescents (12-17 yrs) by Race/Hispanic Ethnicity
MA (2001)



Objective: 26-10a Increase the proportion of adolescents not using alcohol or illicit drugs during the past 30 days

Source: Massachusetts Department of Education. Youth Risk Behavior Survey (YRBS). 2001.

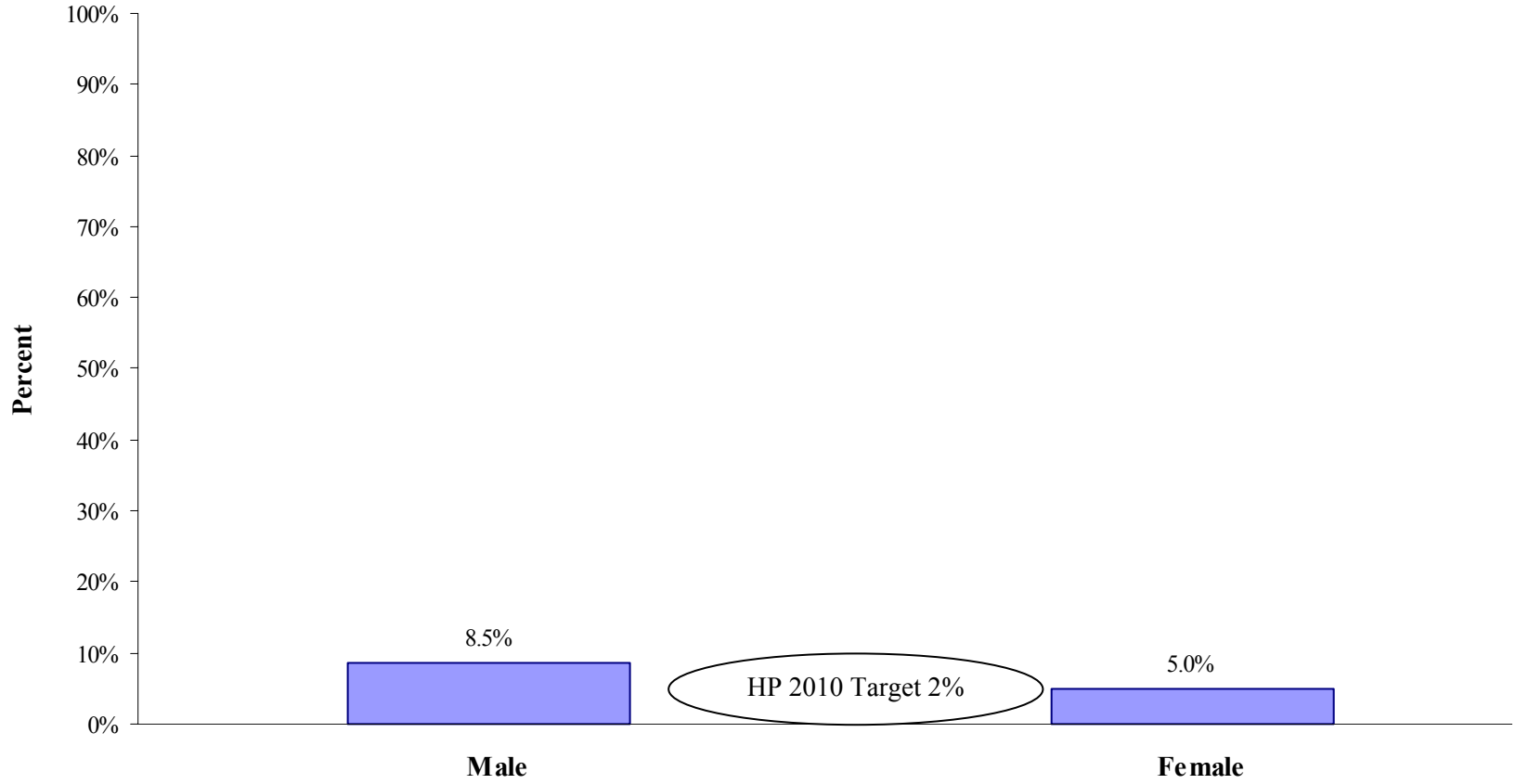
Illicit Drugs in past 30 days
Adults aged 18+ yrs
MA (2001), U.S. (1998), HP 2010



Objective: 26-10c Reduce the proportion of adults using any illicit drugs during the past 30 days

Sources: Substance Abuse and Mental Health Services Administration, Office of the Assistant Secretary. National Household Survey on Drug Abuse. 1998.
Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2001.

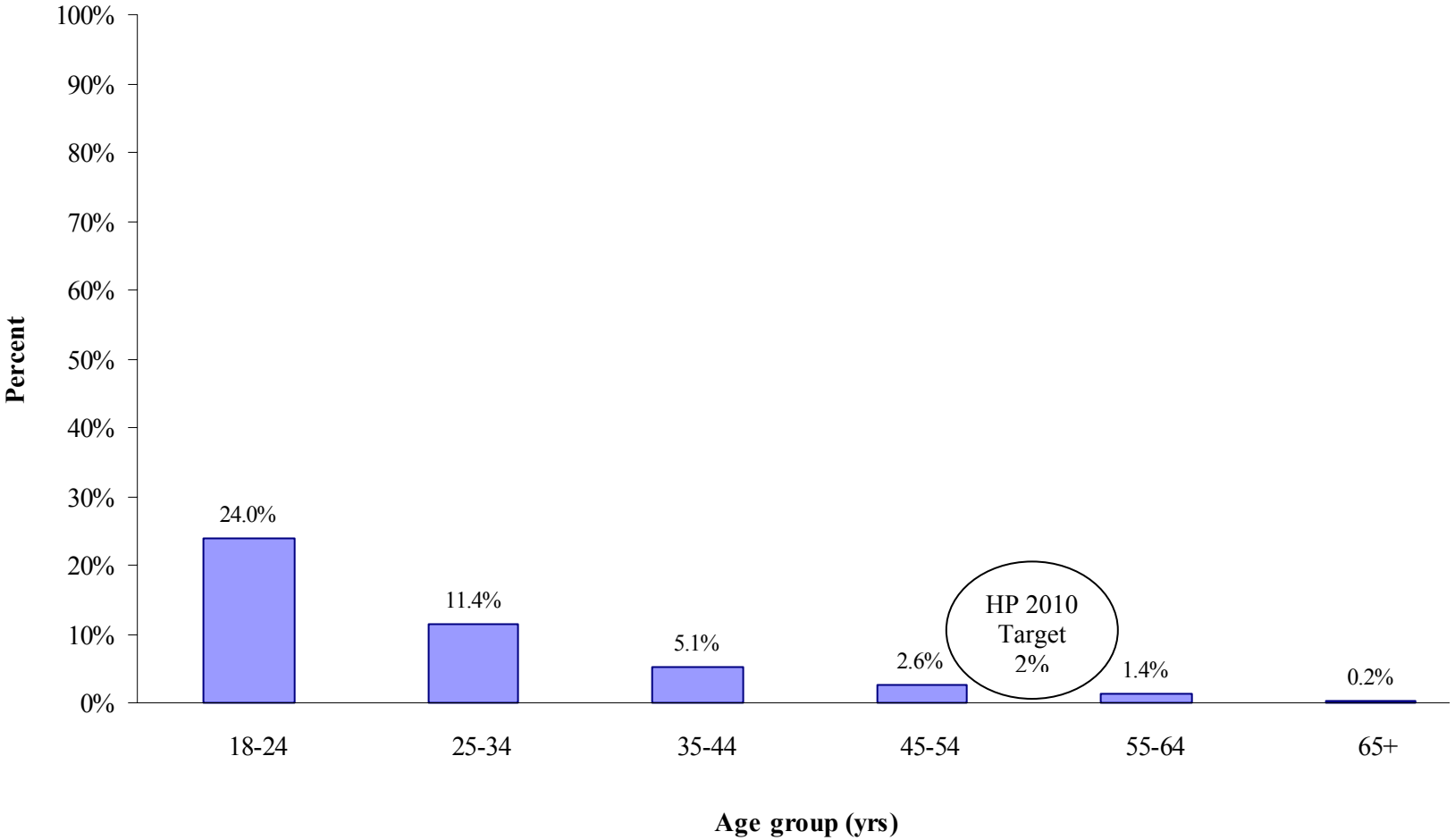
Illicit Drug Use in past 30 days
Persons Ages 18+ years by Gender
MA (2001)



Objective: 26-10c Reduce the proportion of adults using any illicit drugs during the past 30 days

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2001.

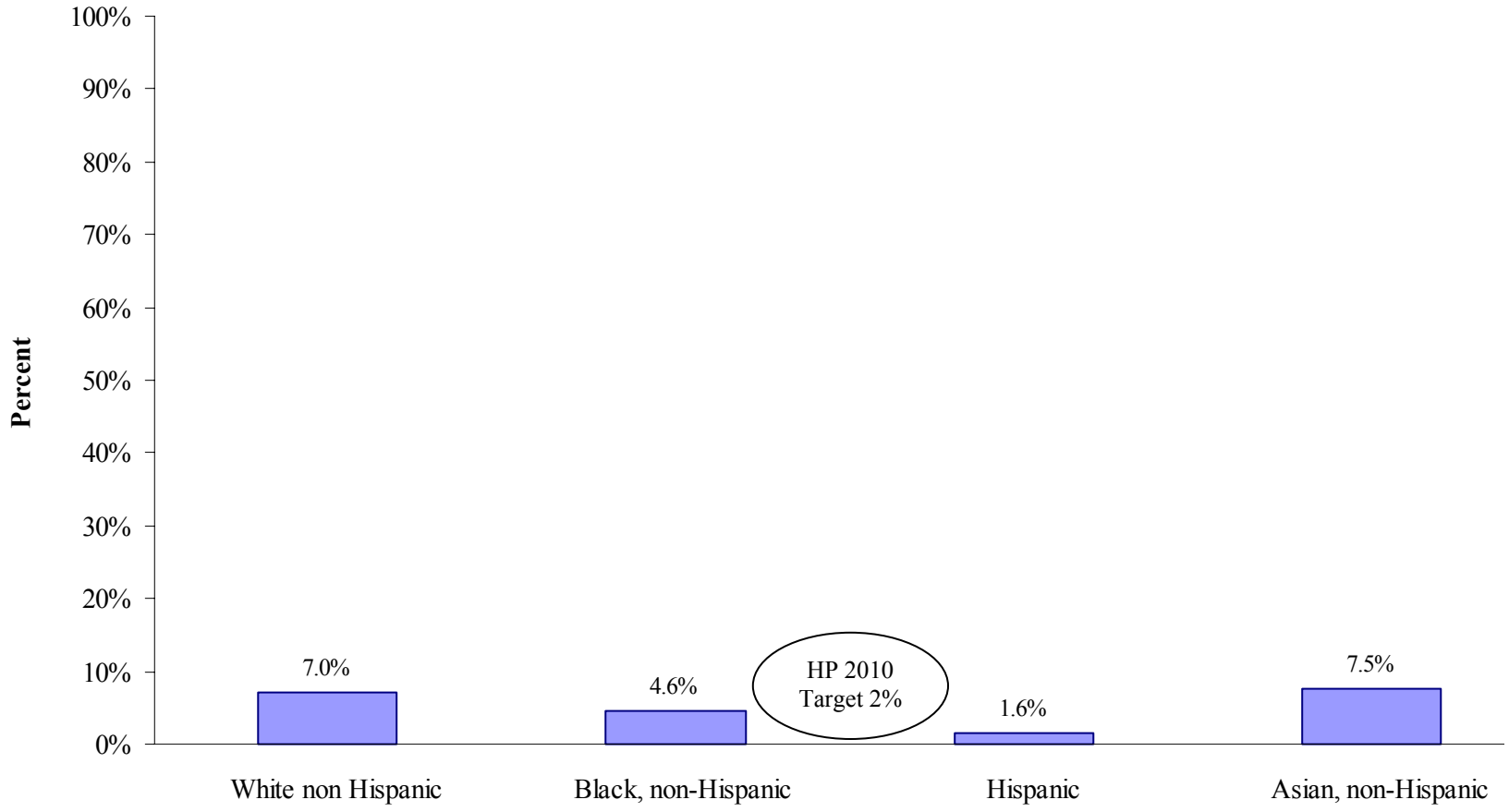
Illicit Drug Use in past 30 days
Persons Ages 18+ years by Age Group
MA (2001)



Objective: 26-10c Reduce the proportion of adults using any illicit drugs during the past 30 days

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2001.

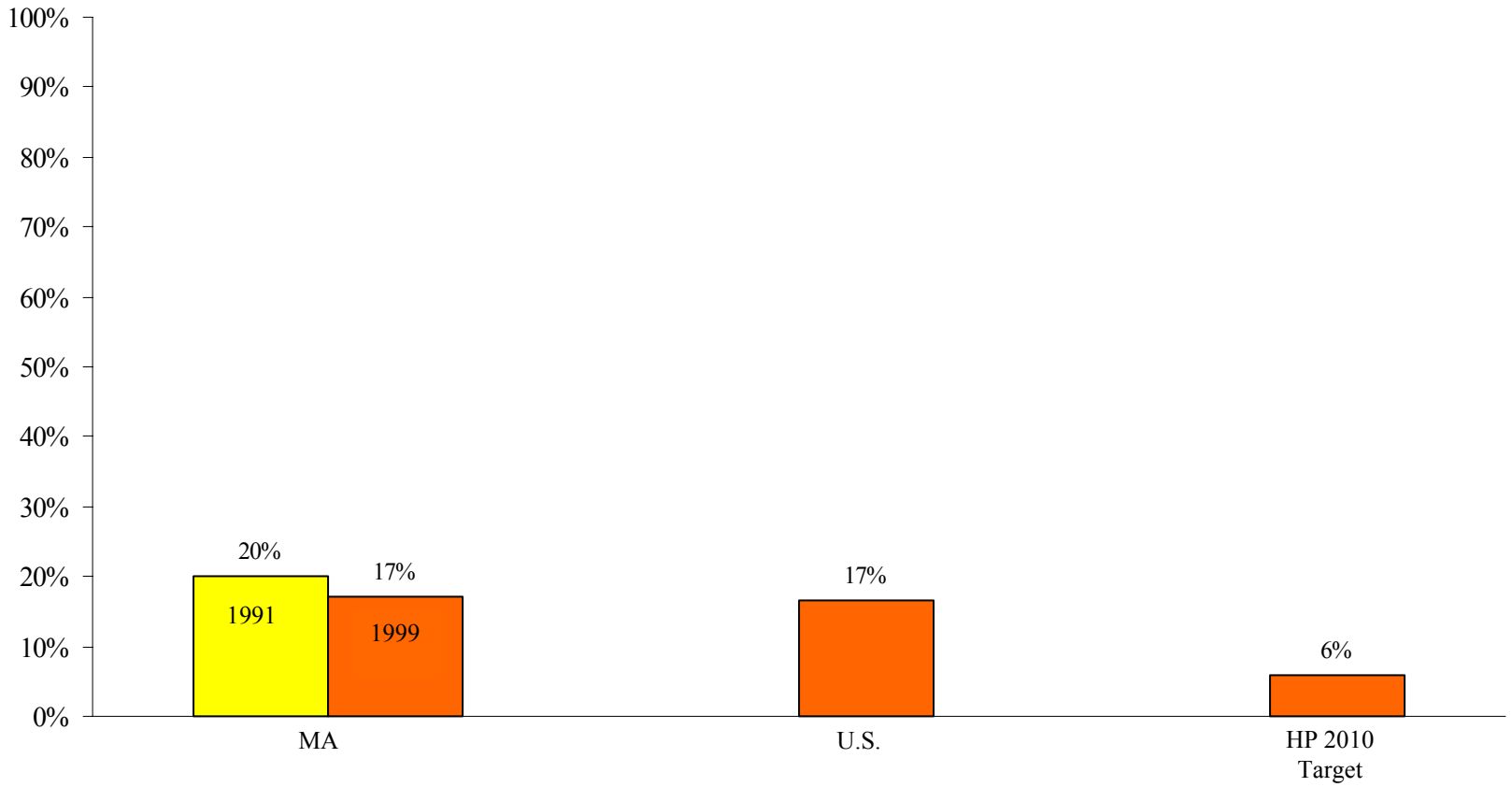
Illicit Drug Use in past 30 days
Persons Ages 18+ years by Race/Hispanic Ethnicity
MA (2001)



Objective: 26-10c Reduce the proportion of adults using any illicit drugs during the past 30 days

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2001.

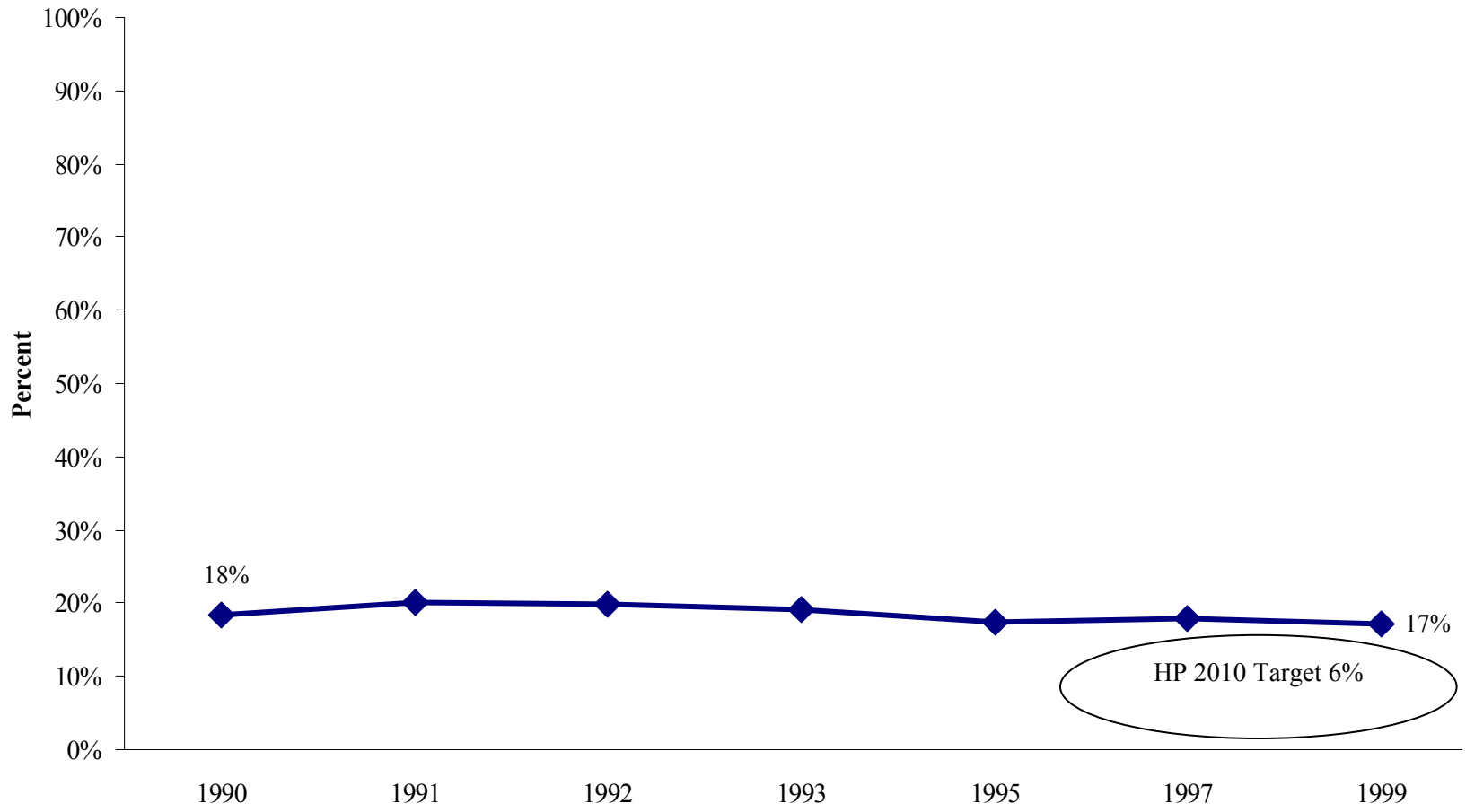
Binge Drinking in past 30 days
Adults aged 18+ yrs
MA (1991,1999), U.S. (1998), HP 2010



Objective: 26-11c Reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month

Sources: Substance Abuse and Mental Health Services Administration, Office of the Assistant Secretary. National Household Survey on Drug Abuse. 1998.
Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1991,1999.

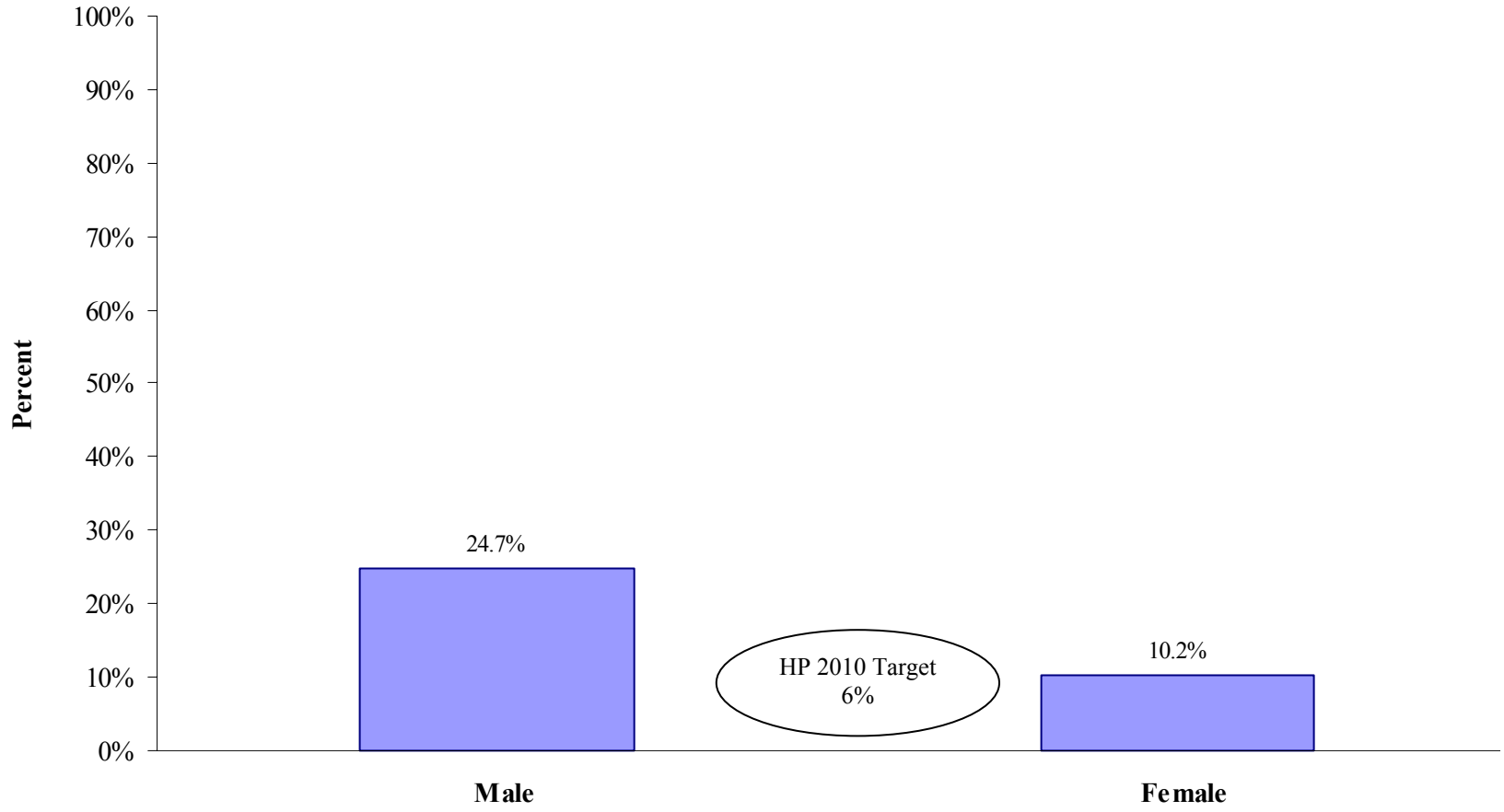
Binge drinking in past 30 days
Adults aged 18+ yrs
MA (1990-1999)



Objective: 26-11c Reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 199-1999.

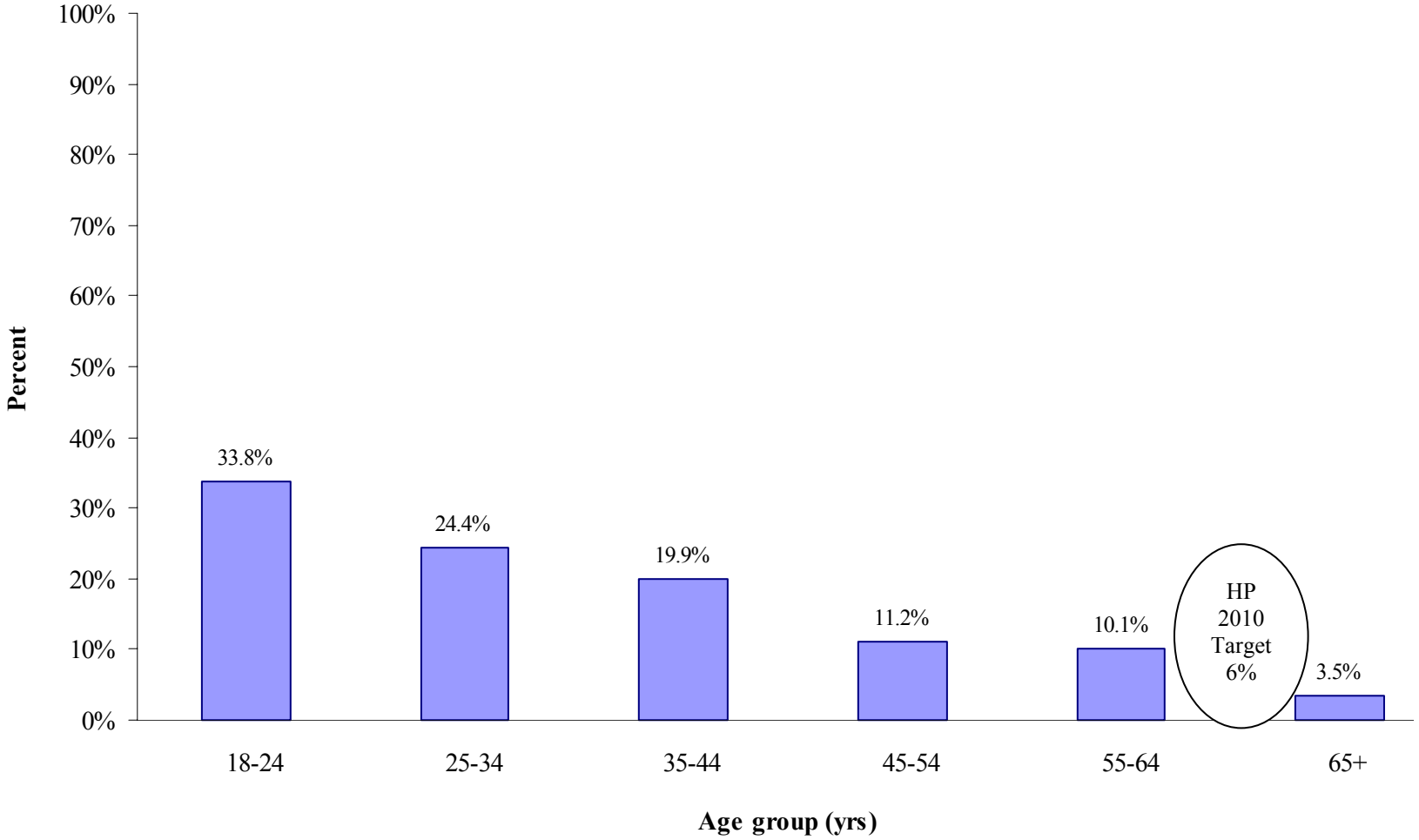
Binge drinking in past 30 days
Persons Ages 18+ years by Gender
MA (1999)



Objective: 26-11c Reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1999.

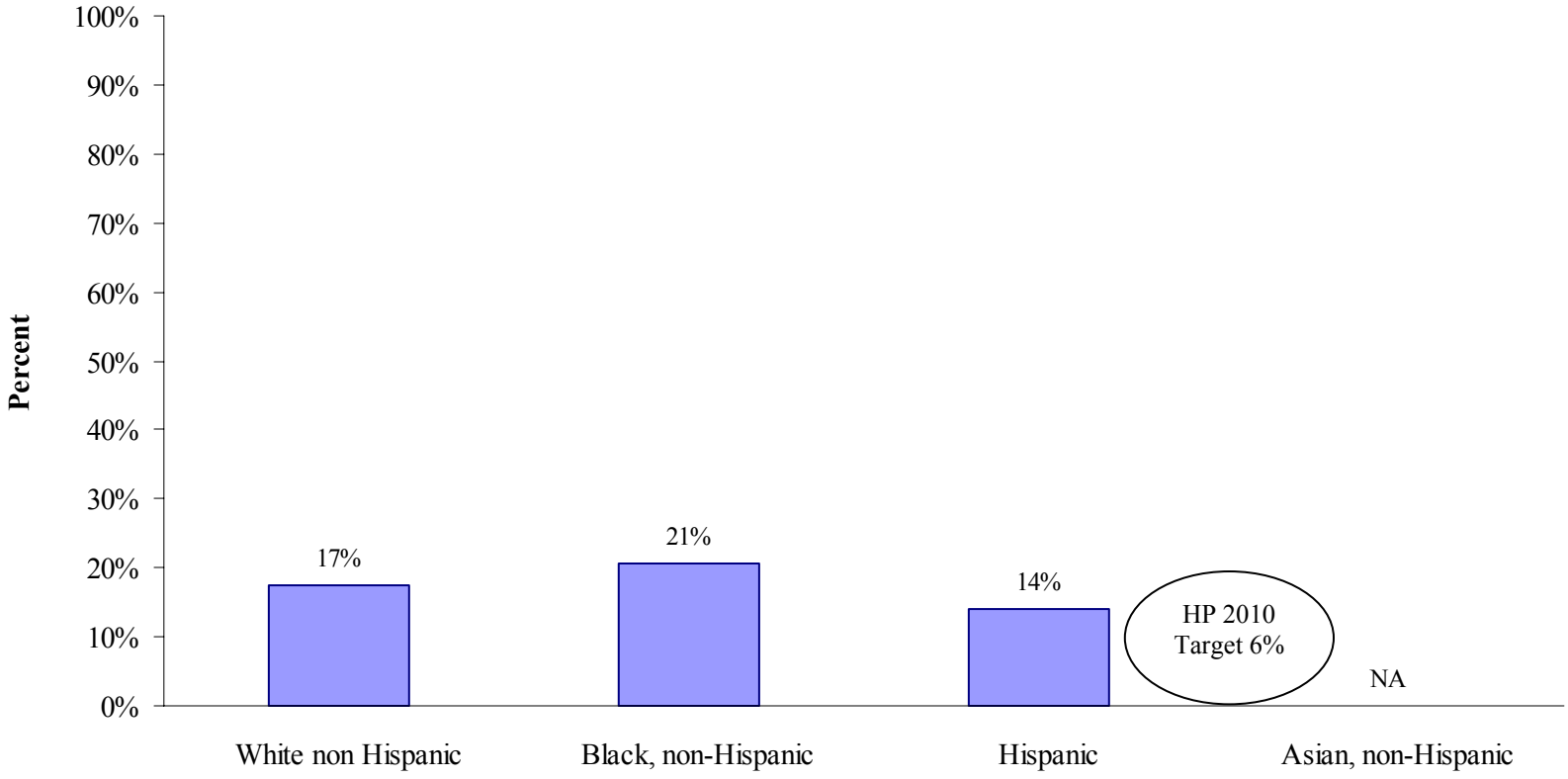
Binge drinking in past 30 days
Persons Ages 18+ years by Age Group
MA (1999)



Objective: 26-11c Reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1999.

Binge drinking in past 30 days
Persons Ages 18+ years by Race/Hispanic Ethnicity
MA (1999)



Objective: 26-11c Reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1999.

Responsible Sexual Behavior

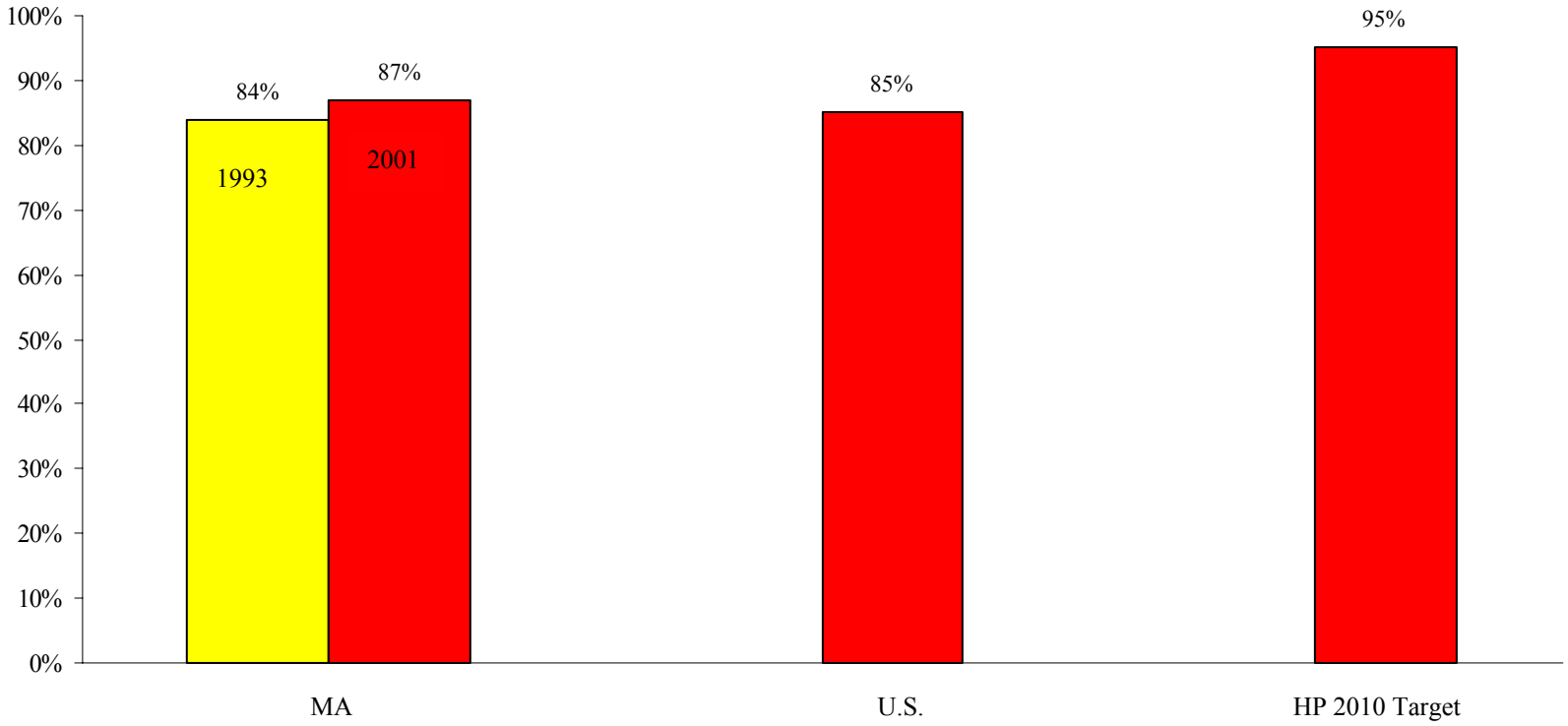
A note about this indicator:

The objectives selected to measure progress among adolescents and adults for this Leading Health Indicator are presented below. These are only indicators and do not represent all the responsible sexual behavior objectives included in Healthy People 2010.

25-11. Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active.
13-6. Increase the proportion of sexually active persons who use condoms.

Data Sources: Behavioral Risk Factor Surveillance System (BRFSS) and the Youth Risk Behavior Survey (YRBS).

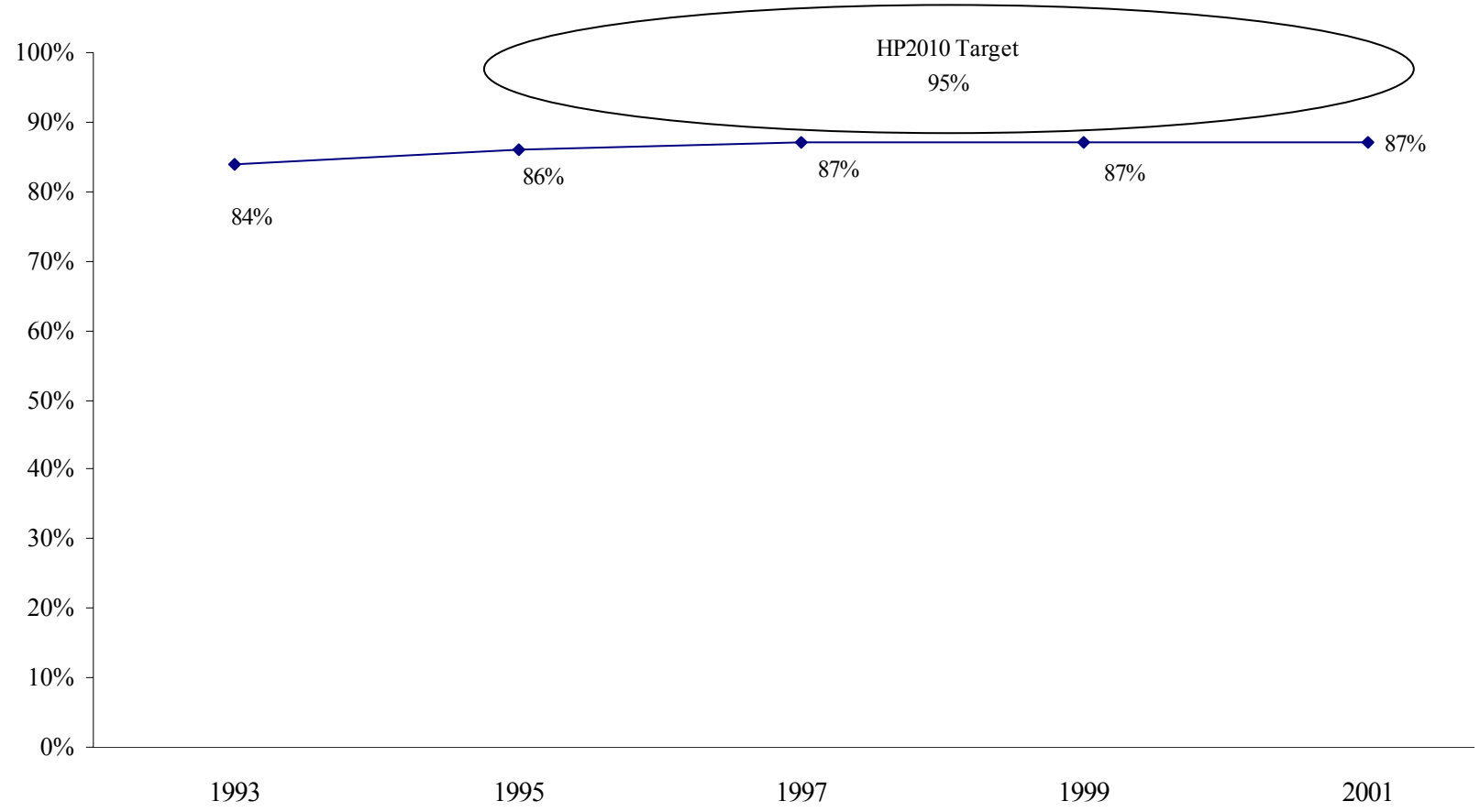
Adolescents in grades 9-12 who abstain from sexual intercourse or use condoms if currently sexually active
MA (1993,2001), U.S. (1999), HP 2010



Objective: 25-11 Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active

Sources: Center for Disease Control and Prevention. Youth Risk Behavior Survey. 1997.
Massachusetts Department of Education, Youth Risk Behavior Survey (YRBS). 1993, 2001.

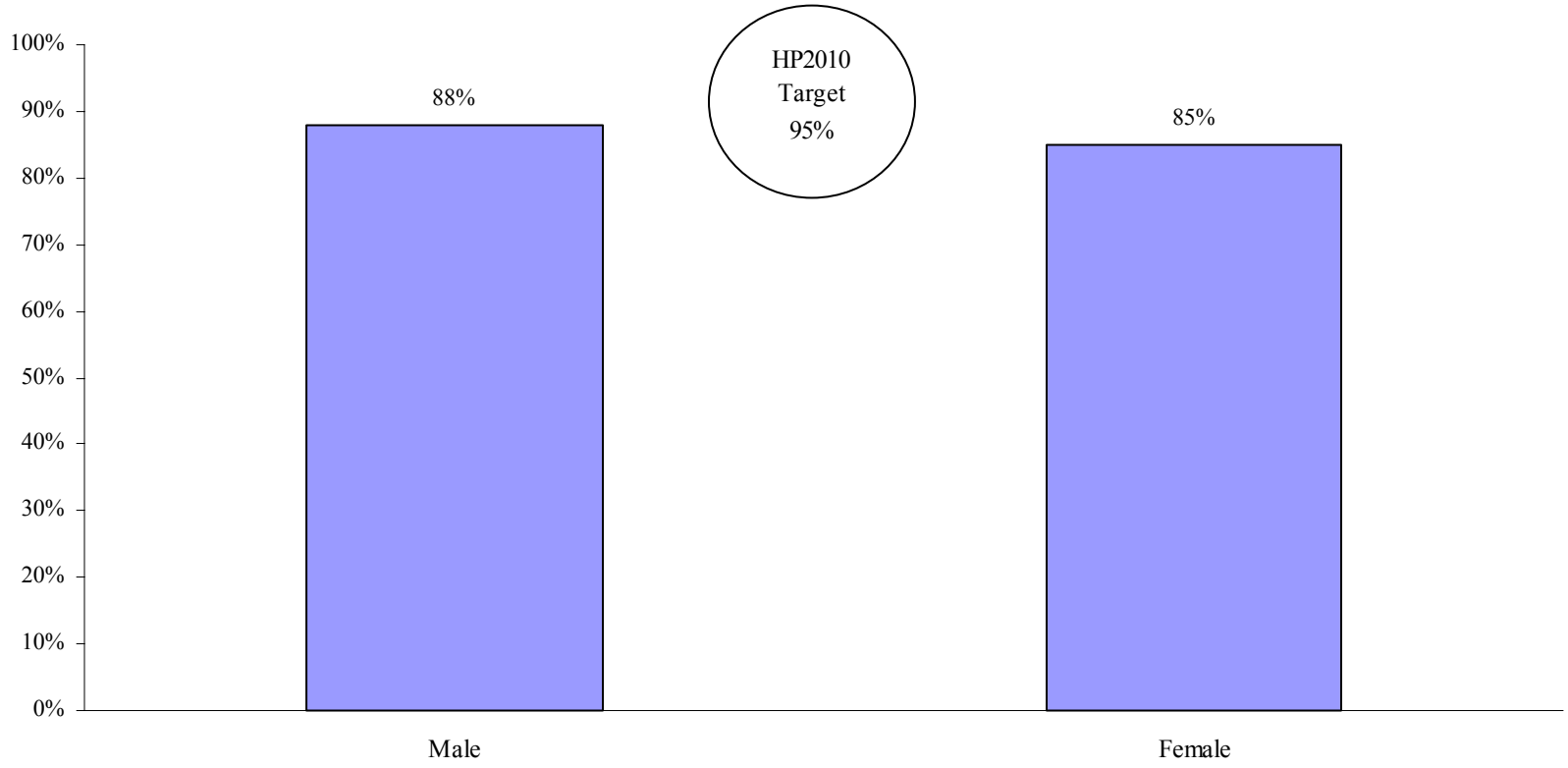
Adolescents in grades 9-12 who abstain from sexual intercourse or use condoms if currently sexually active
MA (1993-2001)



Objective: 25-11 Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active

Source: Massachusetts Department of Education, Youth Risk Behavior Survey (YRBS). 2001.

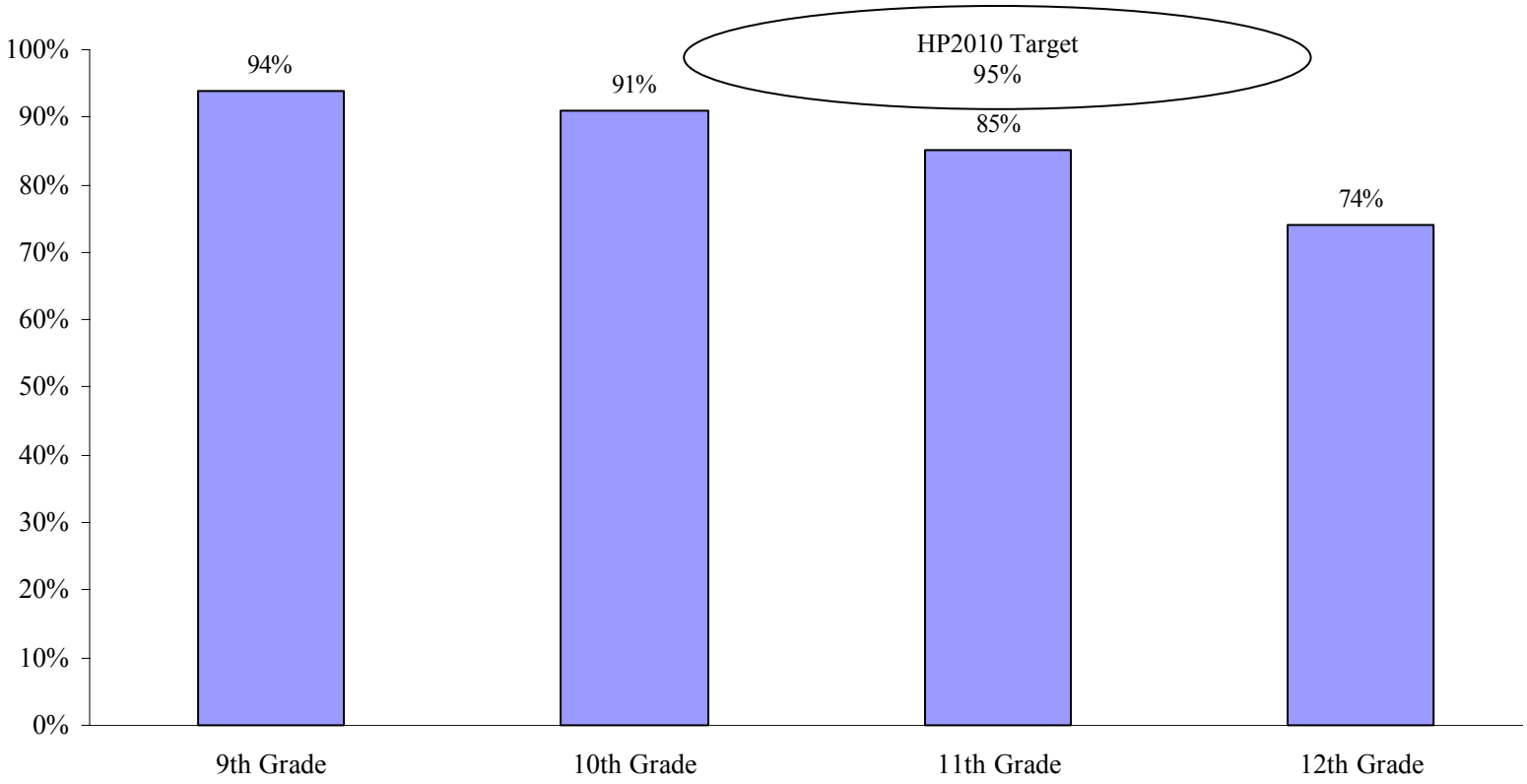
Adolescents in grades 9-12 who abstain from sexual intercourse or use condoms if currently sexually active by gender MA (2001)



Objective: 25-11 Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active

Source: Massachusetts Department of Education, Youth Risk Behavior Survey (YRBS). 2001.

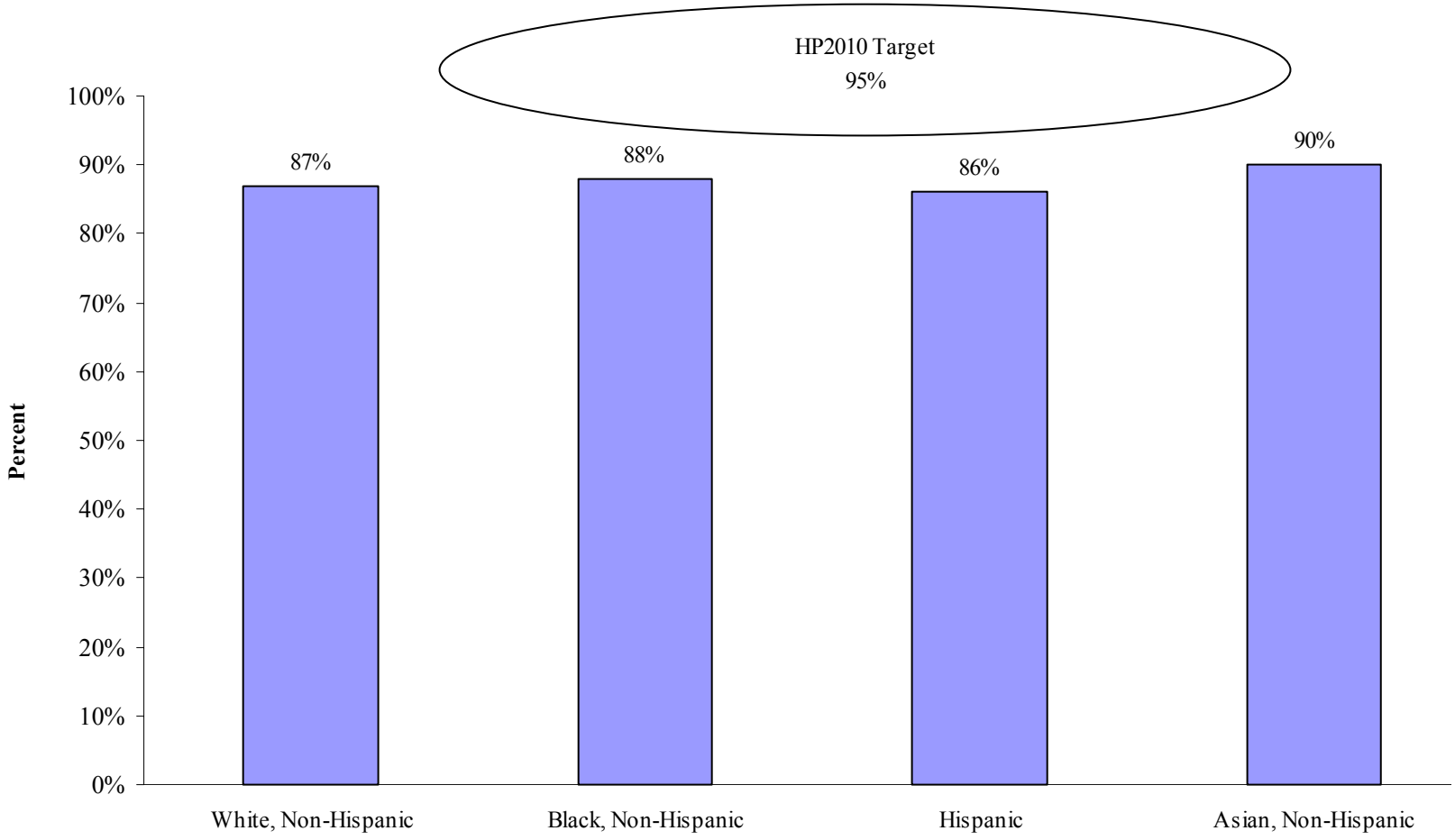
Adolescents in grades 9-12 who abstain from sexual intercourse or use condoms if currently sexually active by Grade
MA (2001)



Objective: 25-11 Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active

Source: Massachusetts Department of Education, Youth Risk Behavior Survey (YRBS). 2001.

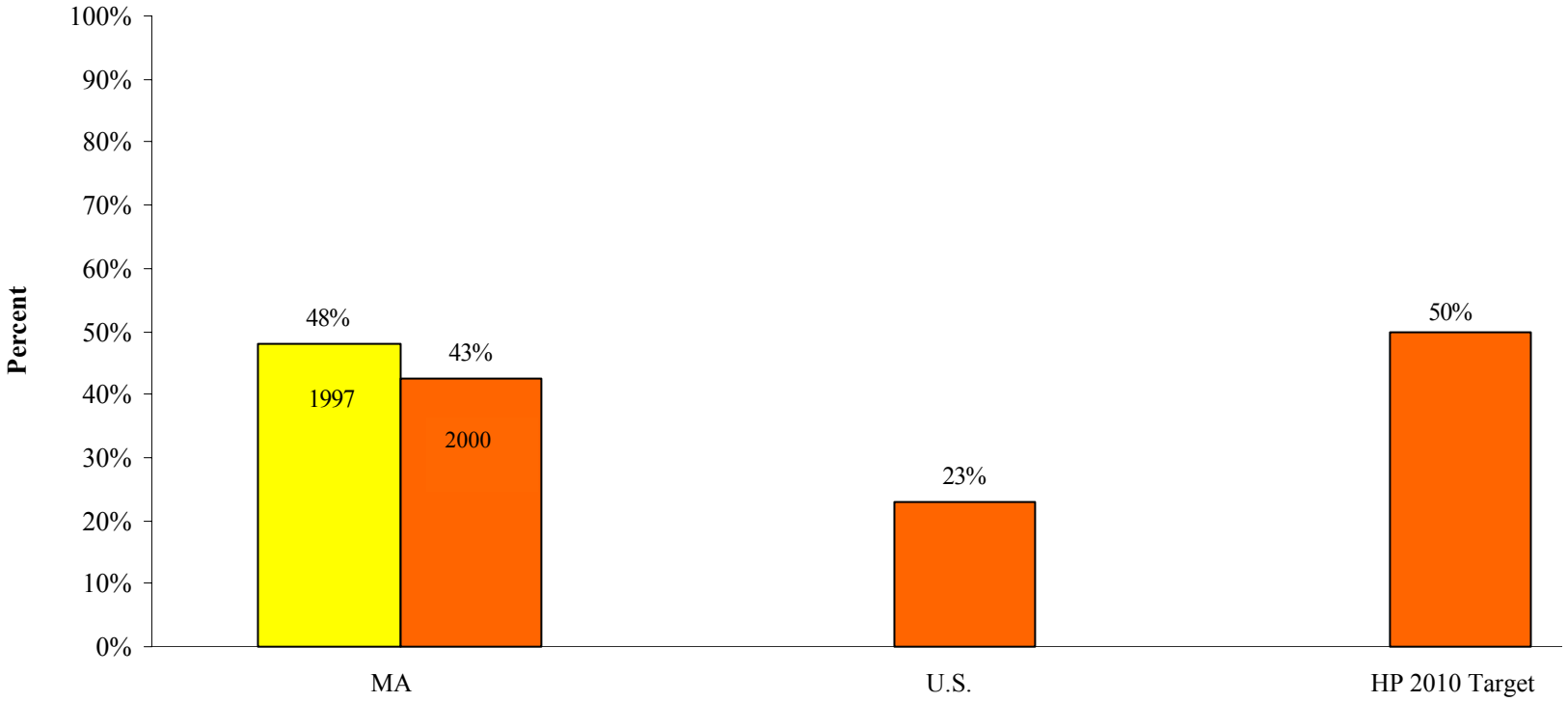
Adolescents in grades 9-12 who abstain from sexual intercourse or use condoms if currently sexually active by Race/Hispanic Ethnicity MA (2001)



Objective: 25-11 Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active

Source: Massachusetts Department of Education, Youth Risk Behavior Survey (YRBS). 2001.

Reported Condom Use by Partners
Unmarried women Aged 18-44
MA[1] (1997, 2000), U.S. (1995), HP 2010

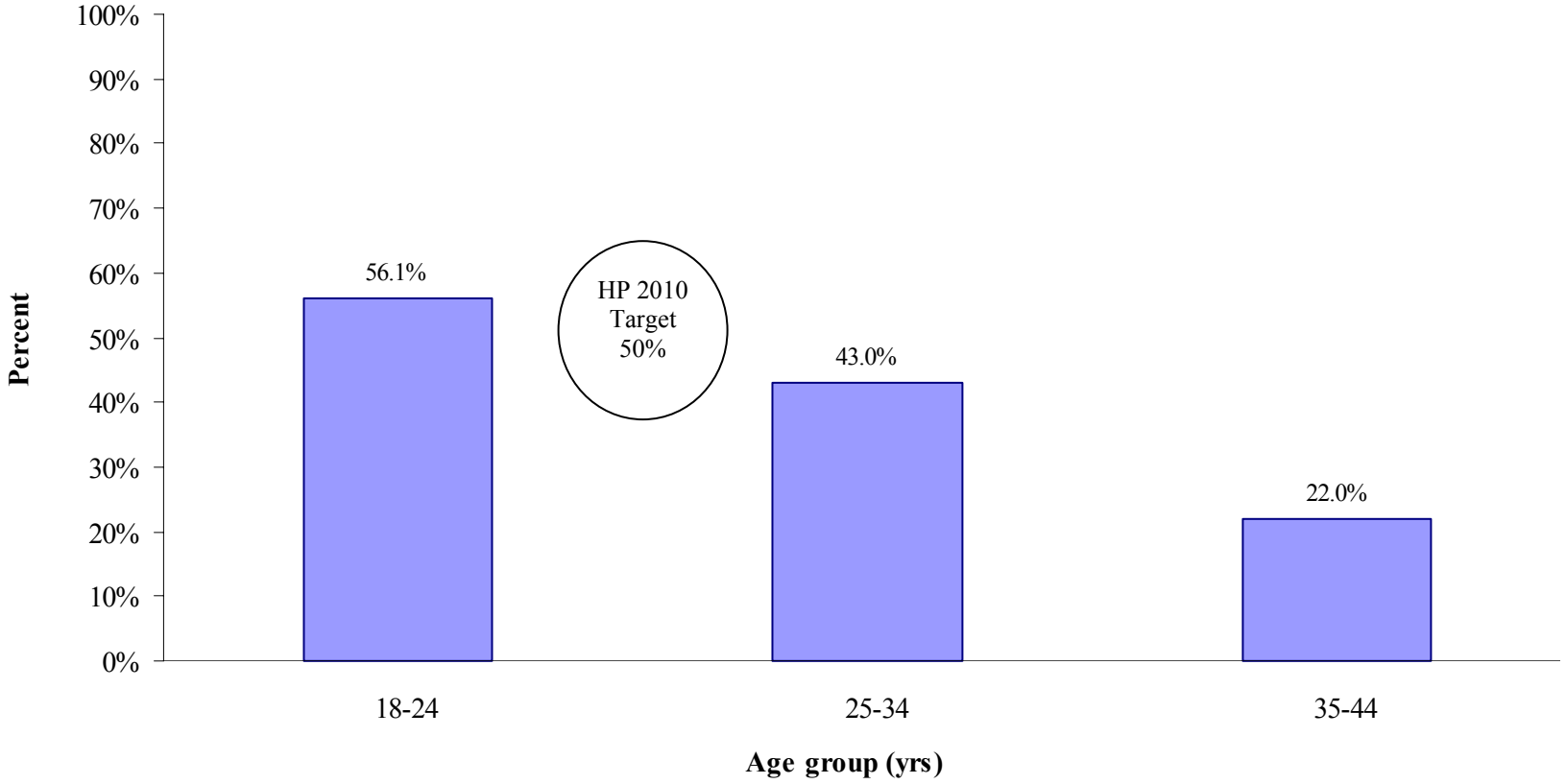


Objective: 13-6 Increase the proportion of sexually active persons who use condoms

Sources: Centers for Disease Control and Prevention, National Center for Health Statistics. National Survey of Family Growth. 1995.
Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1997, 2000.

[1] Asked of females aged 18-25 yrs about their most recent sexual intercourse; unmarried includes: never been married, widowed, separated, divorced and member of an unmarried couple.

Reported Condom Use by Partners
Unmarried women by Age
MA[1] (2000)

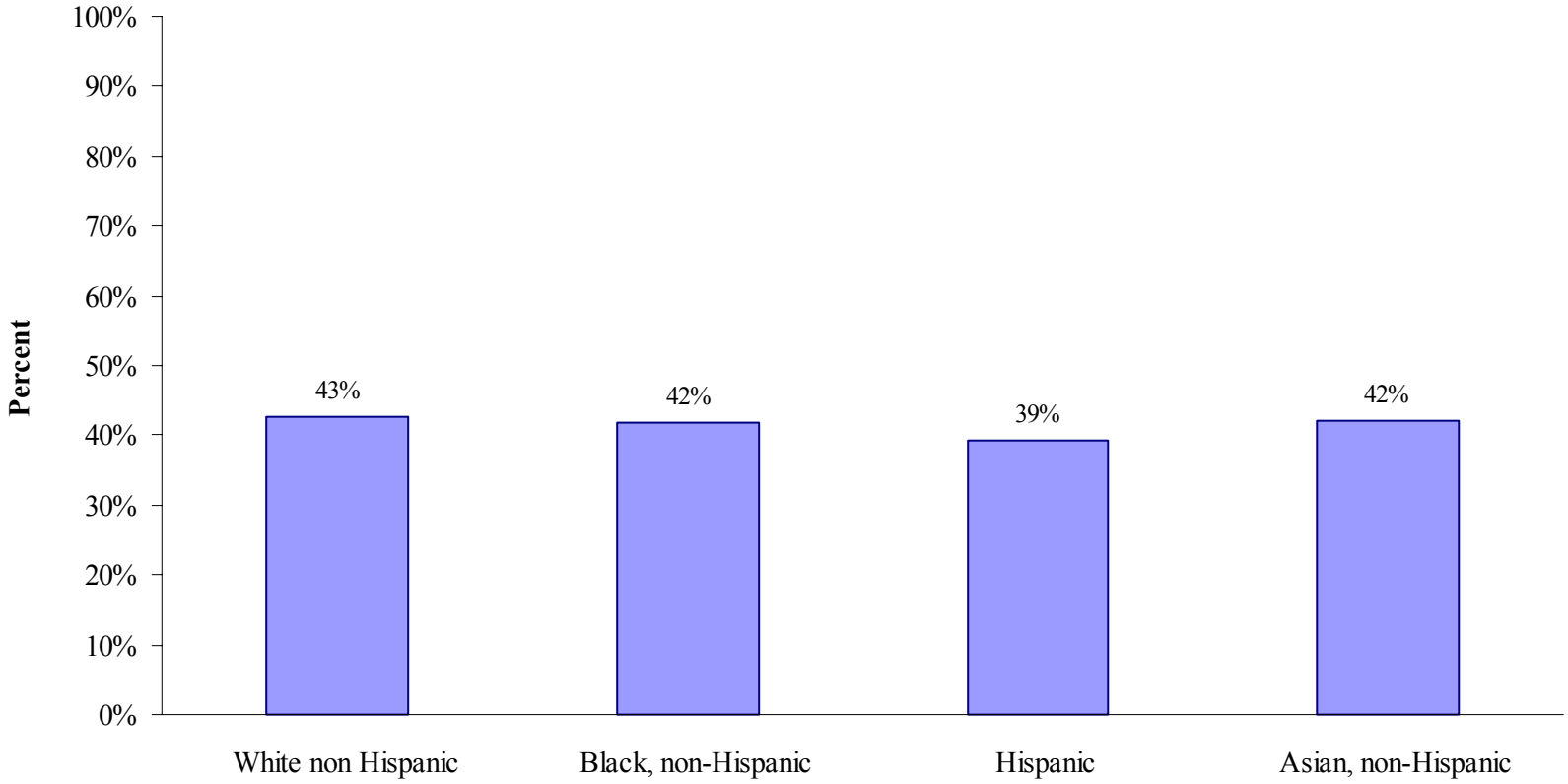


Objective: 13-6 Increase the proportion of sexually active persons who use condoms

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

[1] Asked of females aged 18-25 yrs about their most recent sexual intercourse; unmarried includes: never been married, widowed, separated, divorced and member of an unmarried couple.

Reported Condom Use by Partners
Unmarried Women Aged 18-44 years
by Race/Hispanic Ethnicity
MA (2000)



Objective: 13-6 Increase the proportion of sexually active persons who use condoms

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

Asked of females aged 18-25 yrs about their most recent sexual intercourse; unmarried includes: never been married, widowed, separated, divorced and member of an unmarried couple.

Mental Health

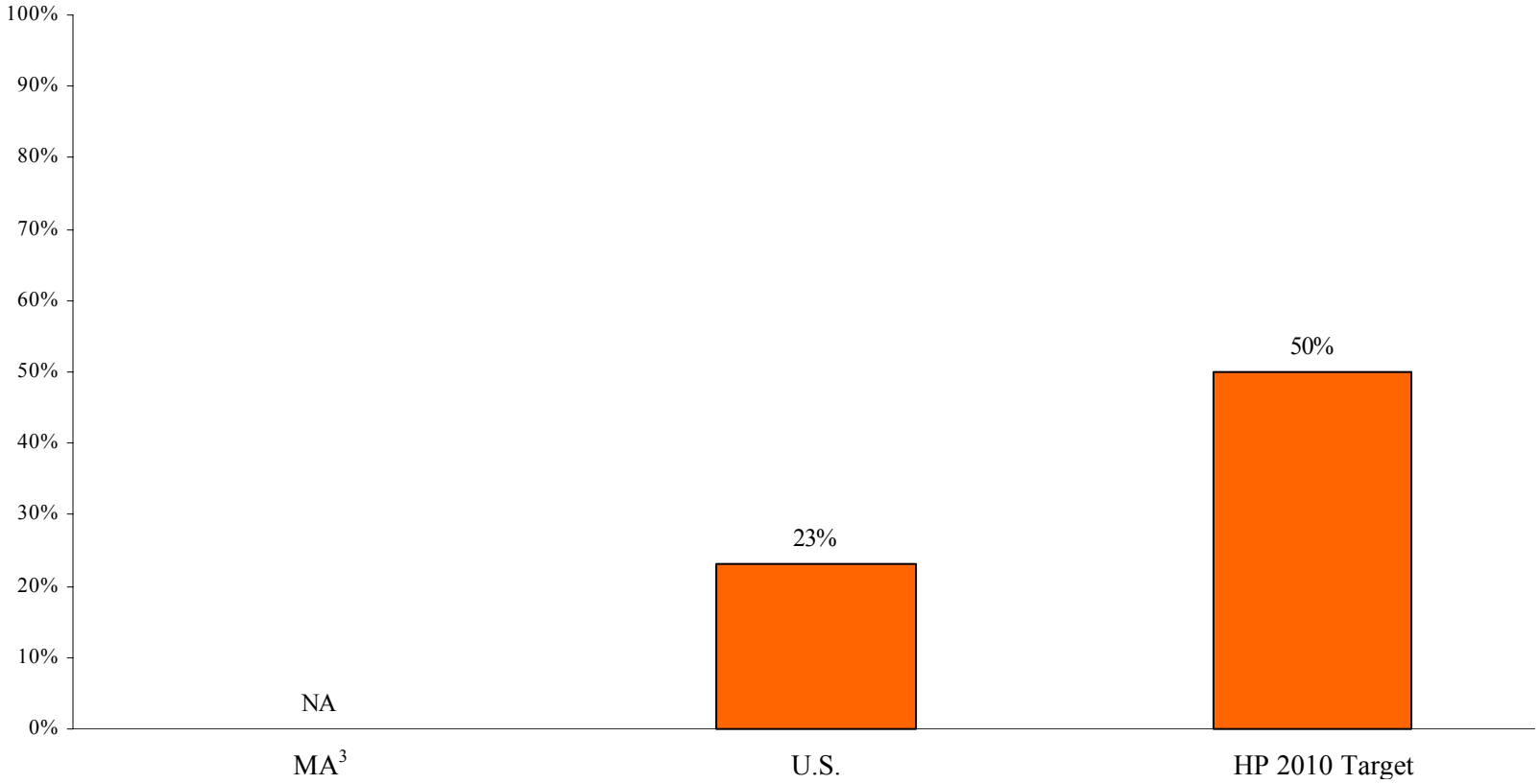
A note about this indicator:

The objective selected to measure progress among adults for this Leading Health Indicator is presented below. This in only an indicator and do not represent all the mental health objectives included in Healthy People 2010.

18-9b. Increase the proportion of adults with recognized depression who receive treatment.

Data Sources: 2002 Behavioral Risk Factor Surveillance System (BRFSS).

Adults with depression[1] who received treatment[2], MA, U.S. (1997), HP 2010



Objective: 18-9b Increase the proportion of adults with recognized depression who receive treatment

[1] Depression is defined as major depressive episode in the past year.
[2] Treatment is defined as treatment in the past year for psychological problems or emotional difficulties at a mental health clinic or by a mental health professional on an outpatient basis or treatment for psychological or emotional difficulties at a hospital overnight or longer.

Source: Substance Abuse and Mental Health Services Administration, Office of Applied Studies. National Household Survey on Drug Abuse. 1997.
[3] MA Data will be available in 2003 (BRFSS)

Injury and Violence

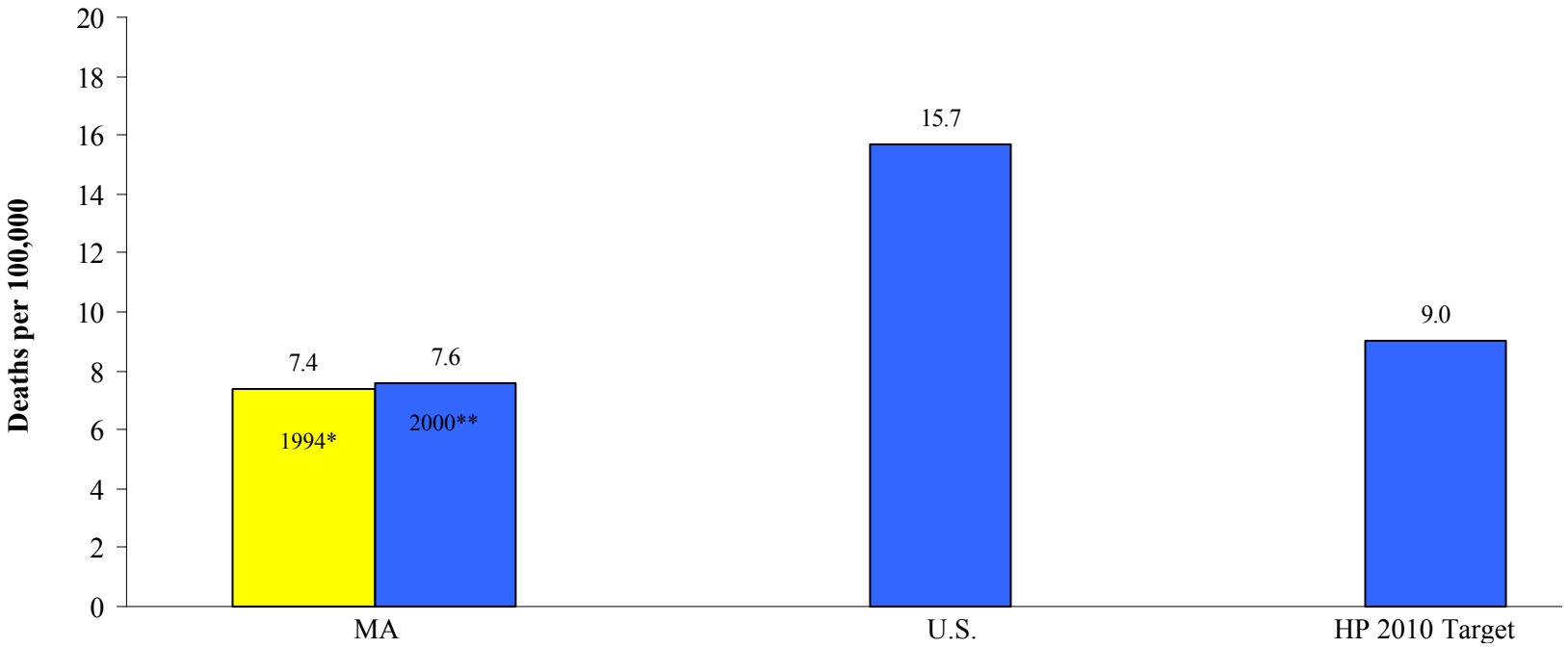
A note about this indicator:

The objectives selected to measure progress for this Leading Health Indicator are presented below. These are only indicators and do not represent all the injury and violence prevention objectives included in Healthy People 2010.

15-15. Reduce deaths caused by motor vehicle crashes.
15-32. Reduce homicides.

Data Sources: Death Certificates.

Motor Vehicle Mortality Rates
MA (1994, 2000), US (2000) and HP 2010



Objective: 15-15 Reduce deaths caused by motor vehicle crashes

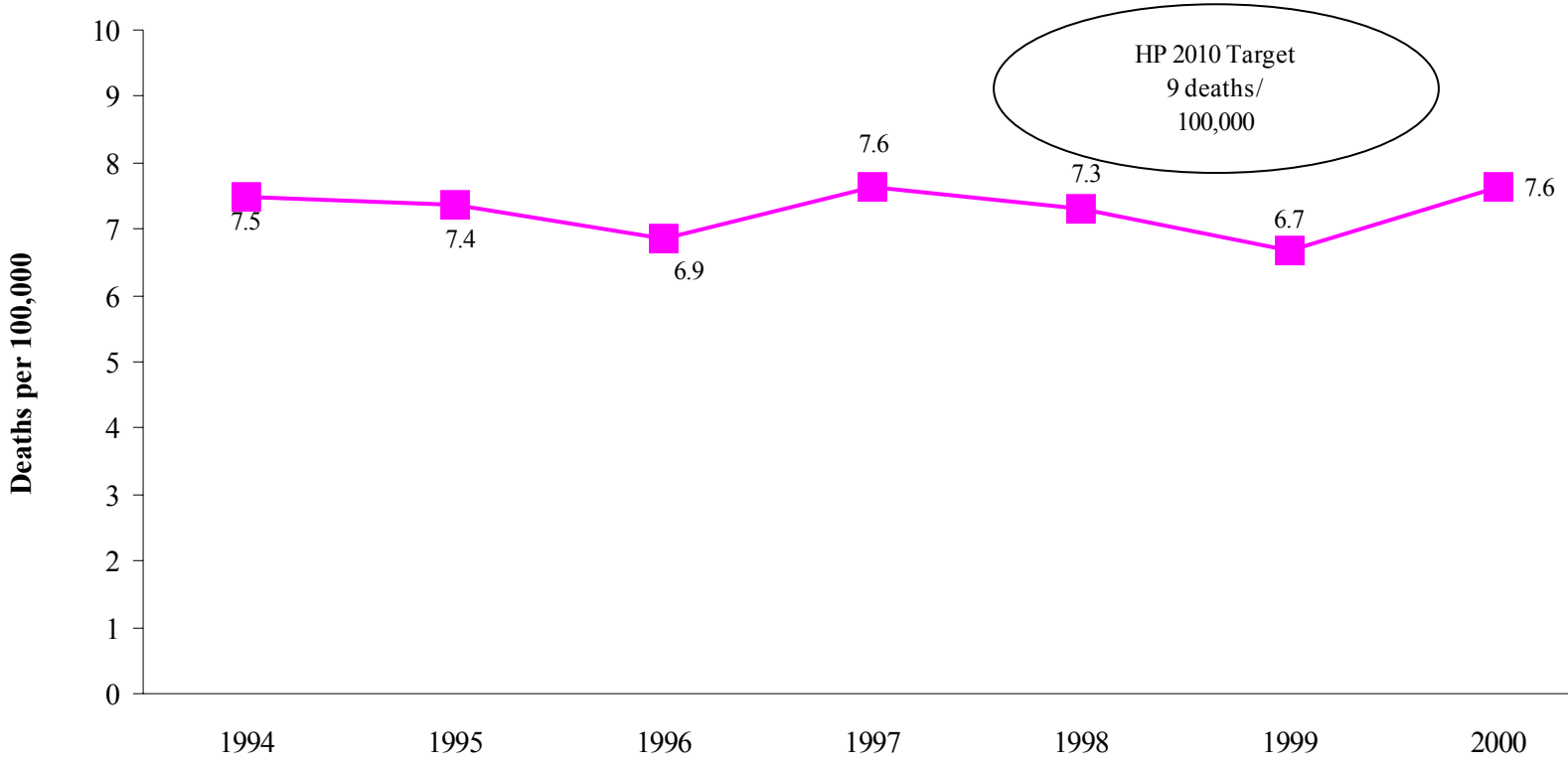
Sources: Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System. 2000.
Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Deaths 1994, 2000.

Rates are per 100,000 age-adjusted to the 2000 US standard population.

*This rate has been adjusted using the preliminary comparability ratio (CR) provided by the NCHS (May 2001). Please refer to the Appendix for a more detailed explanation.

**2000 are coded according to ICD-10. When comparing data over time between 1994 through 2000, please use the comparability modified rate for years 1994-1998.

Motor Vehicle Mortality Rates
Massachusetts 1994-2000



Objective: 15-15 Reduce deaths caused by motor vehicle crashes

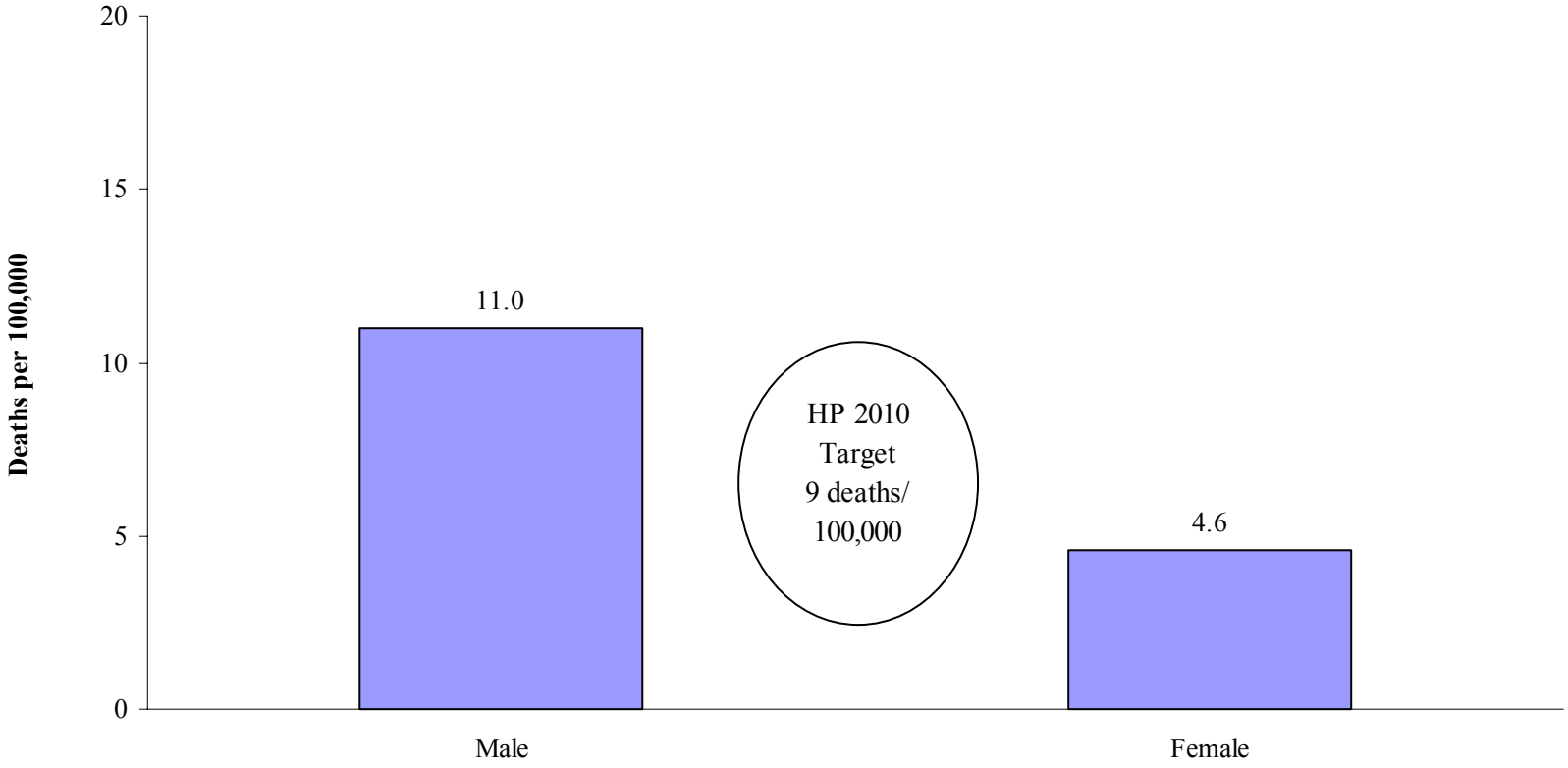
Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Deaths 1994, 2000.

Rates are per 100,000 age-adjusted to the 2000 US standard population.

Rates for 1994-1998 have been adjusted using the preliminary comparability ratio (CR) provided by the NCHS (May 2001). Please refer to the Appendix for a more detailed explanation.

1999 and 2000 are coded according to ICD-10. When comparing data over time between 1994 through 2000, please use the comparability modified rate for years 1994-1998.

Motor Vehicle-Related Mortality Rates by Gender, Massachusetts 2000

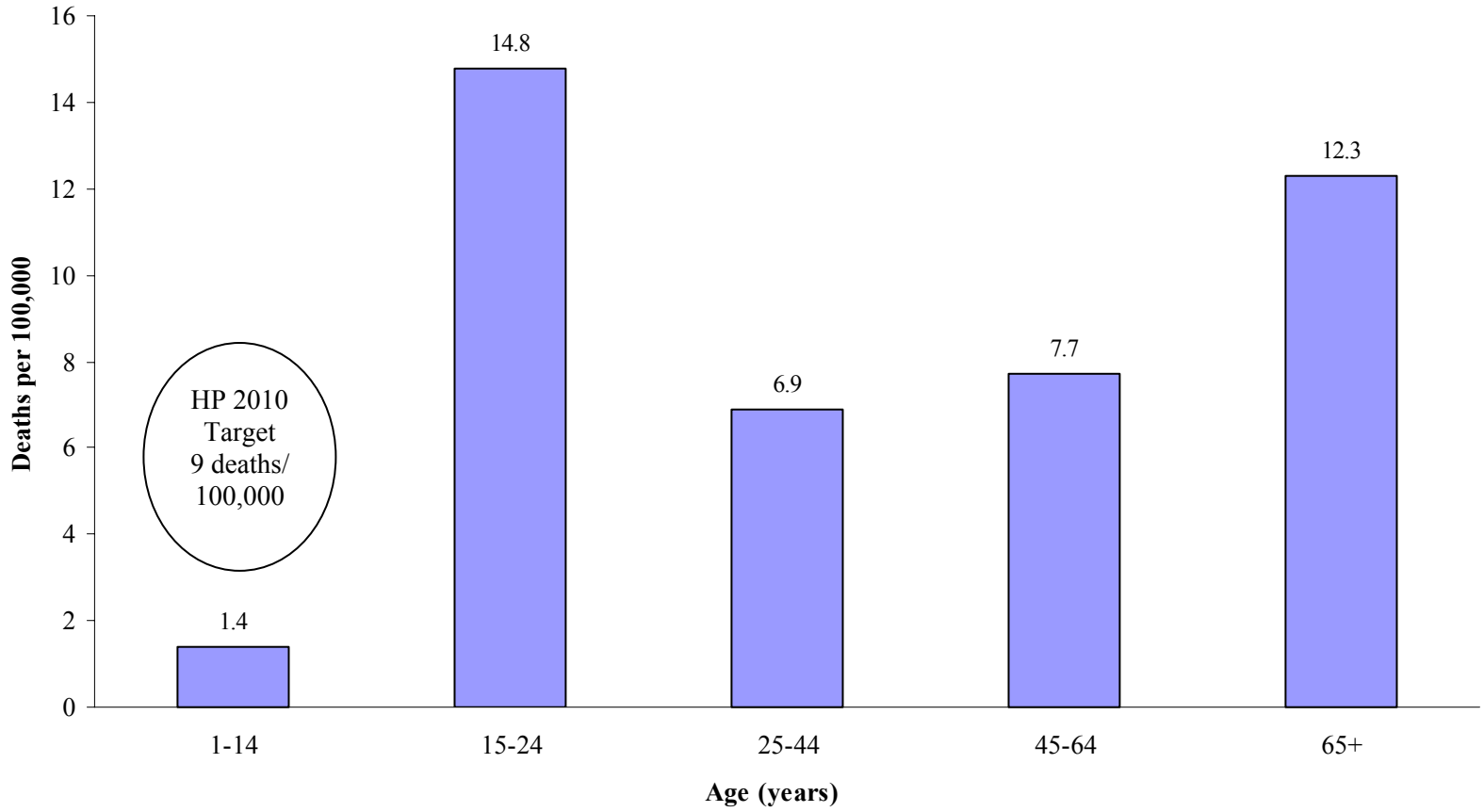


Objective: 15-15 Reduce deaths caused by motor vehicle crashes

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Deaths, 2000.

Rates are per 100,000 age-adjusted to the 2000 US standard population.

Motor Vehicle-Related Mortality Rates by Age Groups, Massachusetts 2000

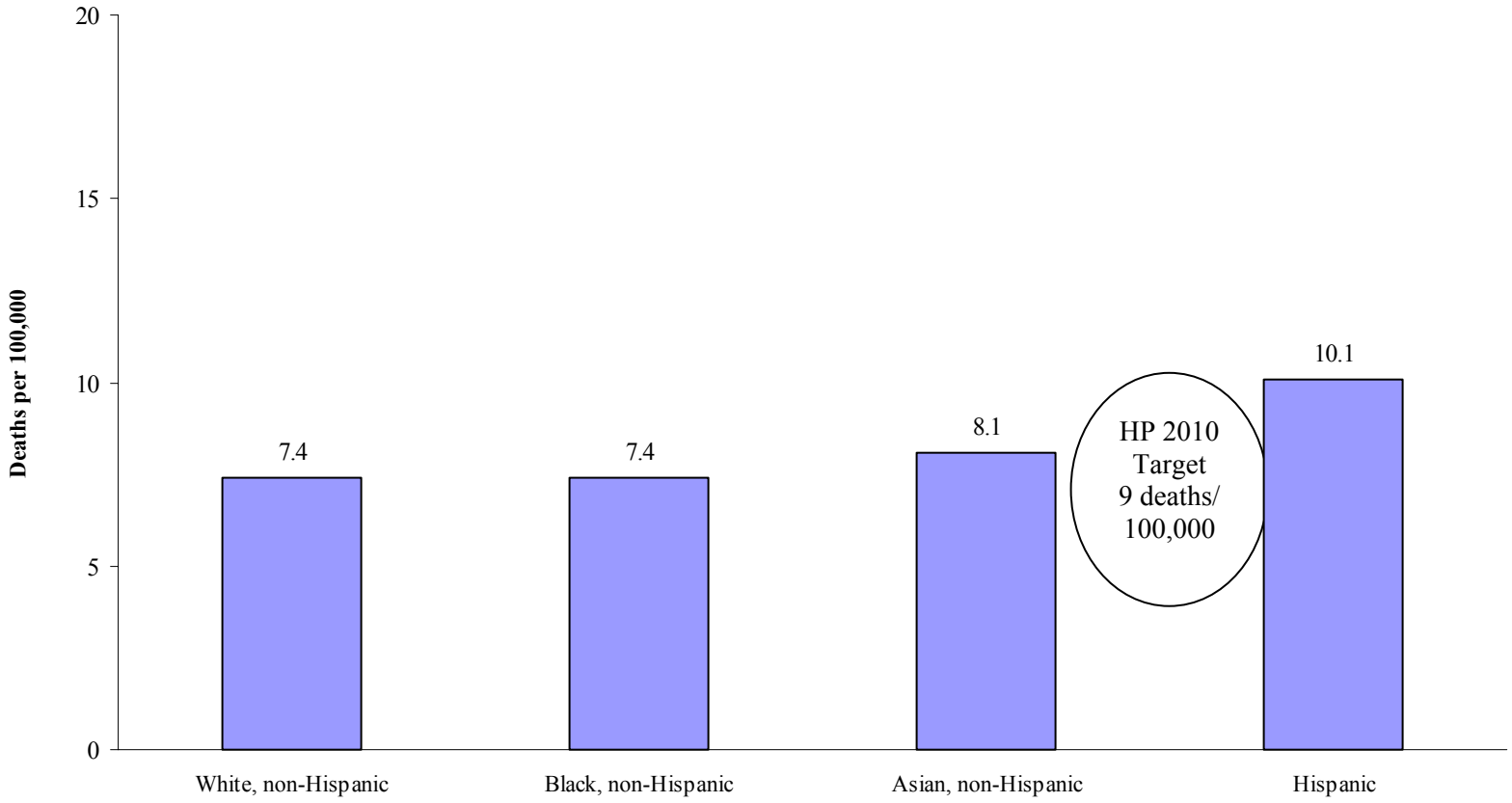


Objective: 15-15 Reduce deaths caused by motor vehicle crashes

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Deaths, 2000.

Rates are per 100,000 age-adjusted to the 2000 US standard population.

Motor Vehicle-Related Mortality Rates
by Race/Hispanic ethnicity, Massachusetts 2000

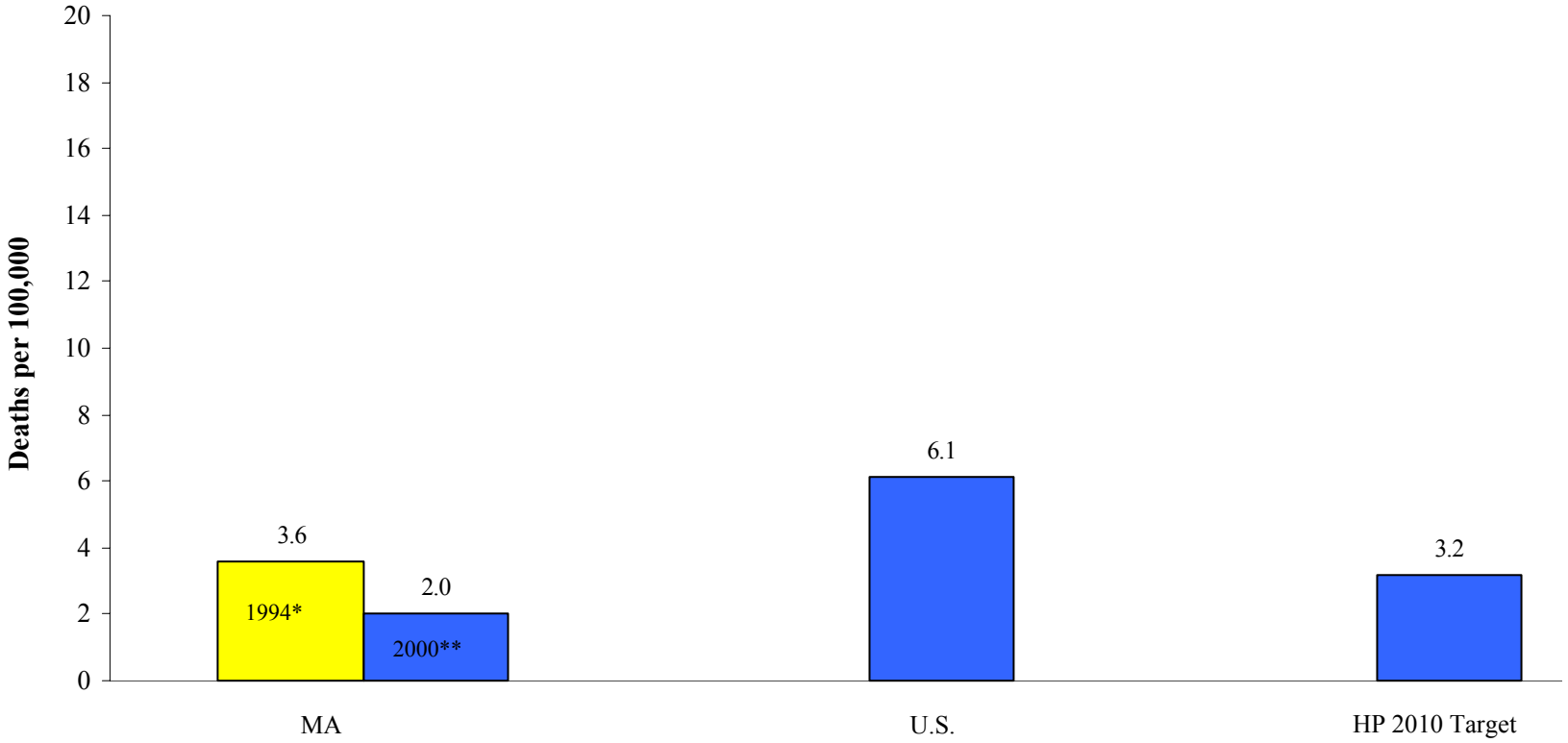


Objective: 15-15 Reduce deaths caused by motor vehicle crashes

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Deaths, 2000.

Rates are per 100,000 age-adjusted to the 2000 US standard population.

Homicide Mortality Rates
MA (1994, 2000), US (2000) and HP 2010



Objective: 15-32 Reduce homicides

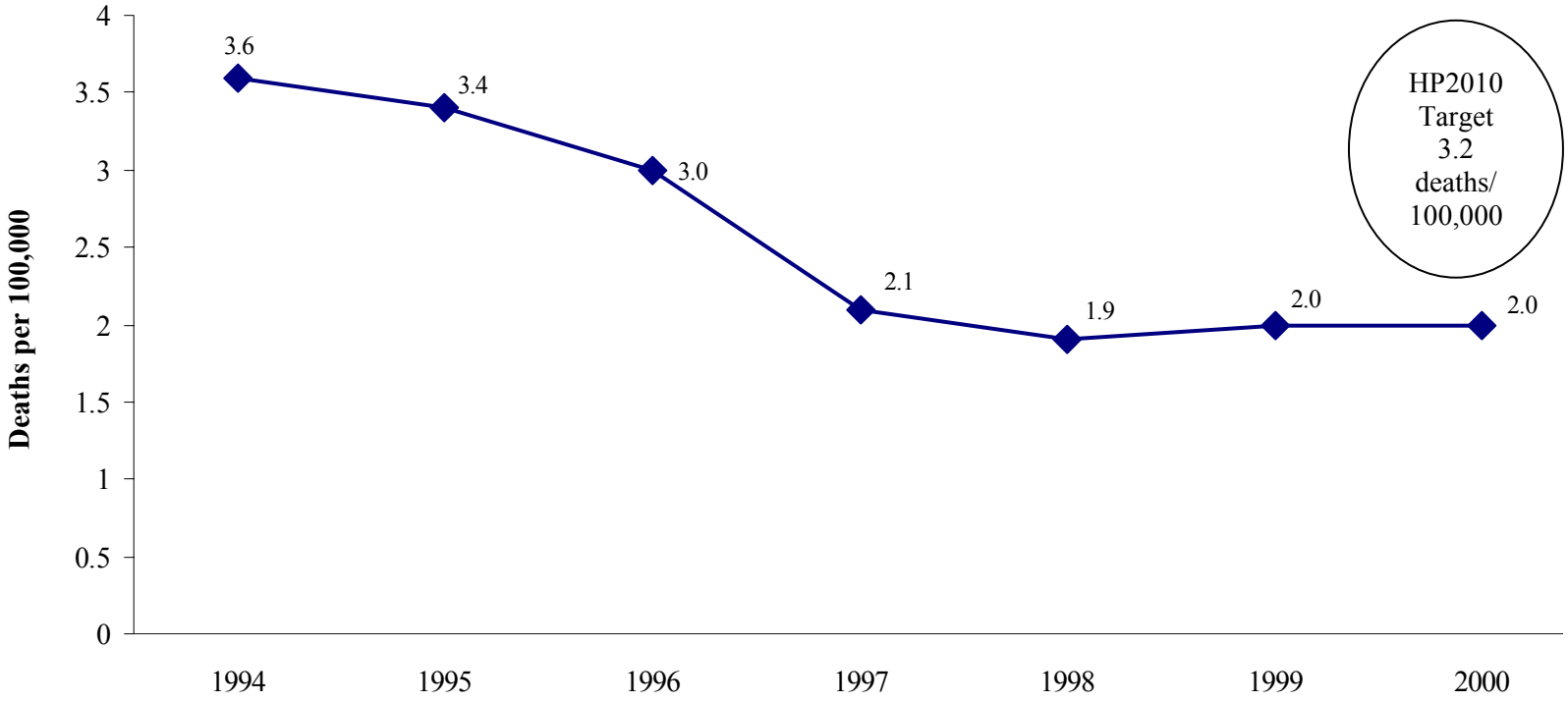
Sources: Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System. 2000.
Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Deaths 1994, 2000.

Rates are per 100,000 age-adjusted to the 2000 US standard population.

1994-1998 rates have been adjusted using the preliminary comparability ratio (CR) provided by the NCHS (May 2001). Please refer to the Appendix for a more detailed explanation.

1999 and 2000 are coded according to ICD-10. When comparing data over time between 1994 through 2000, please use the comparability modified rate for years 1994-

Homicide Mortality Rates
Massachusetts 1994-2000



Objective: 15-32 Reduce homicides

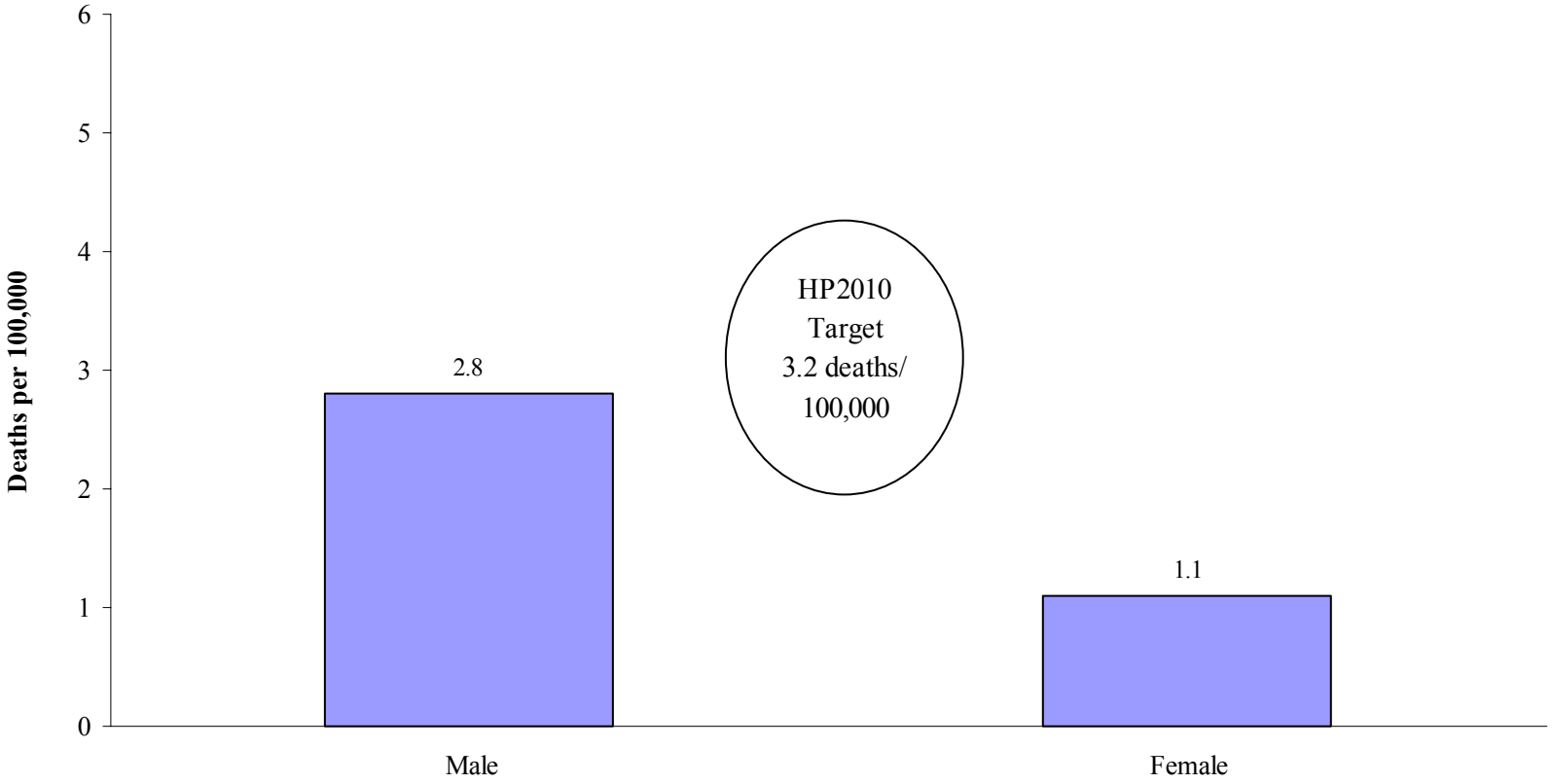
Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Deaths 1994, 2000.

Rates are per 100,000 age-adjusted to the 2000 US standard population.

1994-1998 have been adjusted using the preliminary comparability ratio (CR) provided by the NCHS (May 2001). Please refer to the Appendix for a more detailed explanation. Comparability ratio is not applicable for years prior to 1994.

1999 and 2000 data are coded according to ICD-10. When comparing data over time between 1994 through 2000, please use the comparability modified rate for years 1994-1998.

Homicide Mortality Rates
by gender, Massachusetts 2000

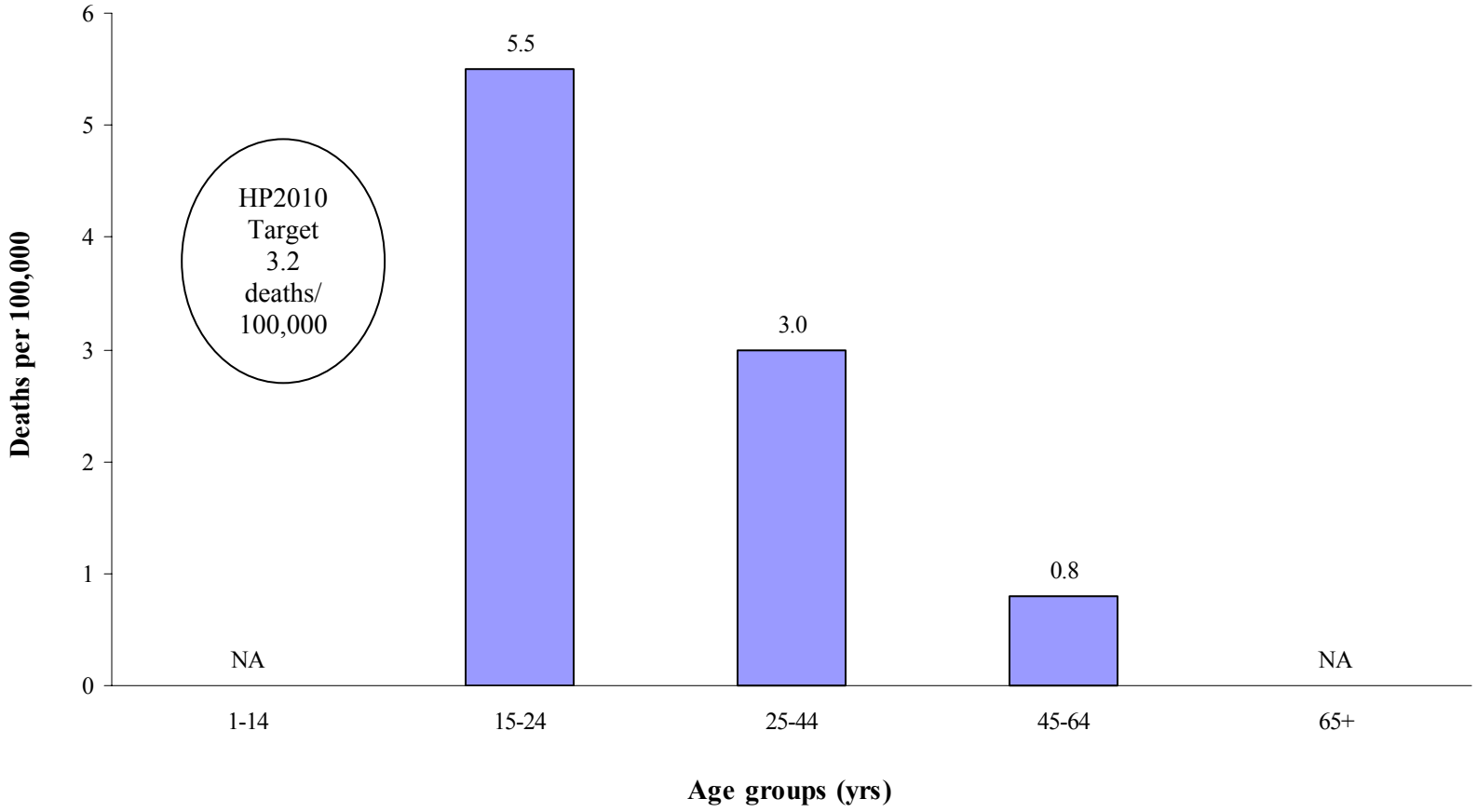


Objective: 15-32 Reduce homicides

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Deaths, 2000.

Rates are per 100,000 age-adjusted to the 2000 US standard population.

Homicide Mortality Rates by Age Group
Massachusetts 2000

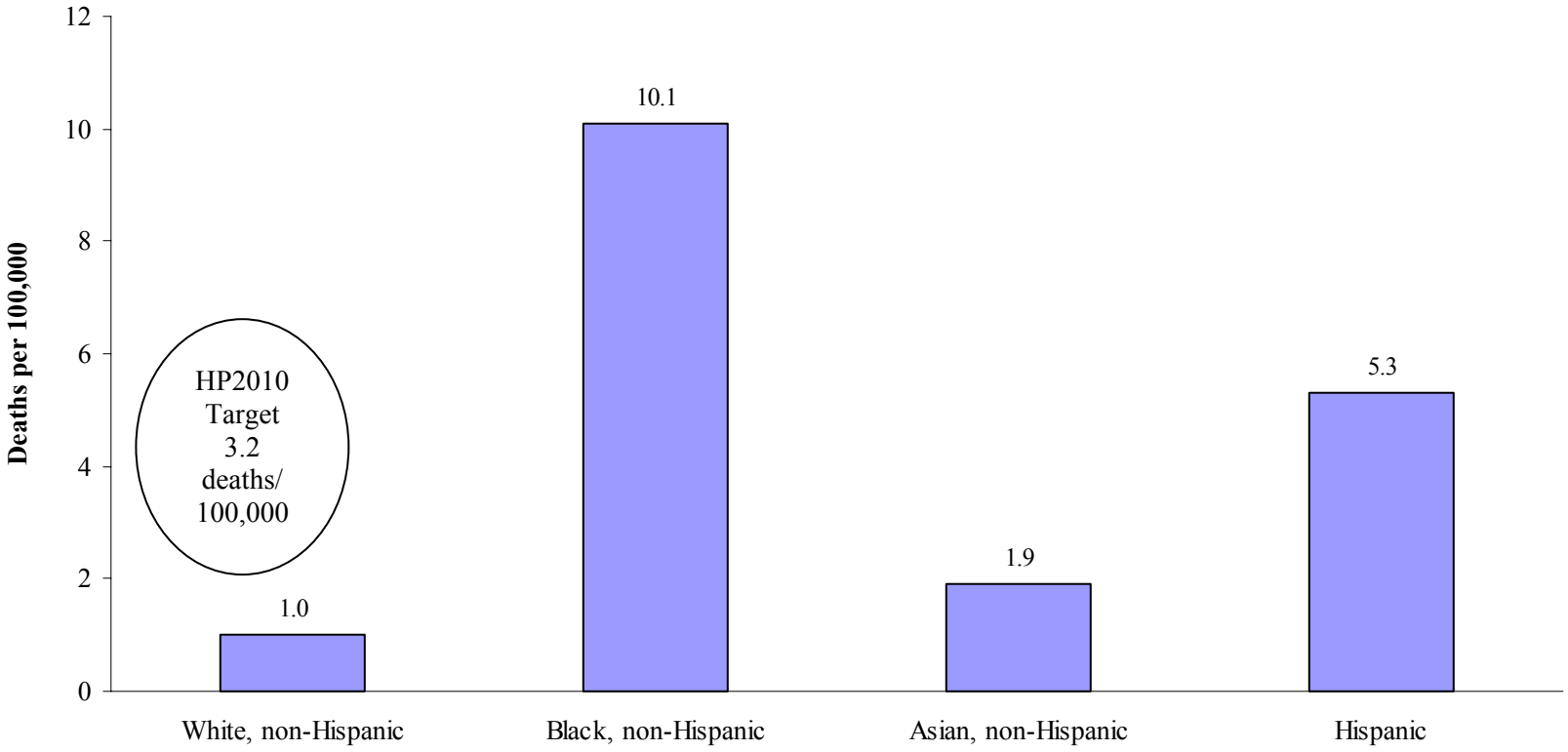


Objective: 15-32 Reduce homicides

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Deaths, 2000.

Rates are per 100,000 age-adjusted to the 2000 US standard population.

Homicide Mortality Rates by Race/ethnicity
Massachusetts 2000



Objective: 15-32 Reduce homicides

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Deaths, 2000.

Rates are per 100,000 age-adjusted to the 2000 US standard population.

Environmental Quality

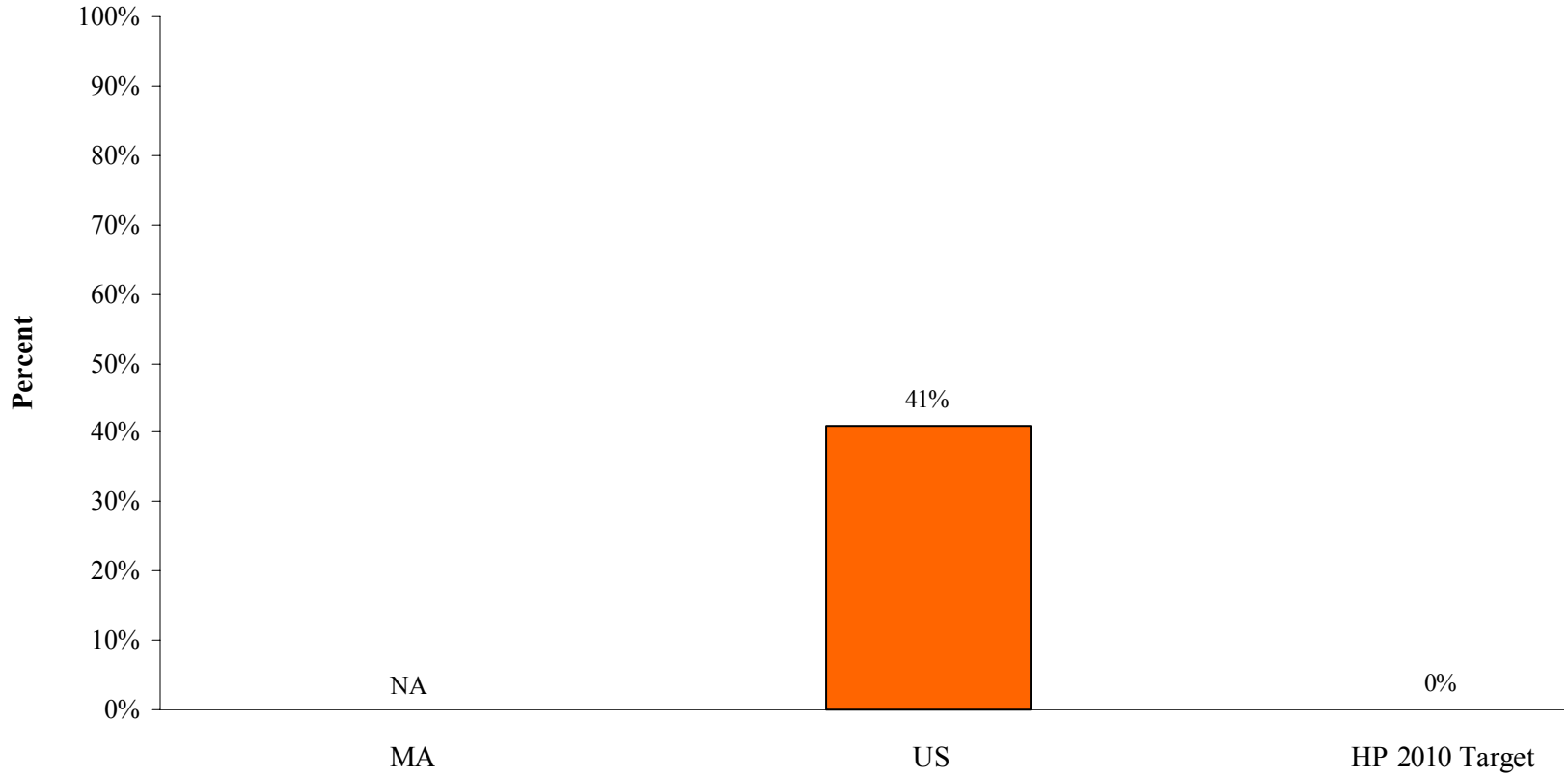
A note about this indicator:

The objectives selected to measure progress among children, adolescents, and adults for this Leading Health Indicator are presented below. These are only indicators and do not represent all the environmental quality objectives included in Healthy People 2010.

8-1a. Reduce the proportion of persons exposed to air that does not meet the U.S. Environmental Protection Agency's health-based standards for ozone.
27-10. Reduce the proportion of nonsmokers exposed to environmental tobacco smoke.

Data Sources: U.S. Environmental Protection Agency and the Massachusetts Adult Tobacco Survey.

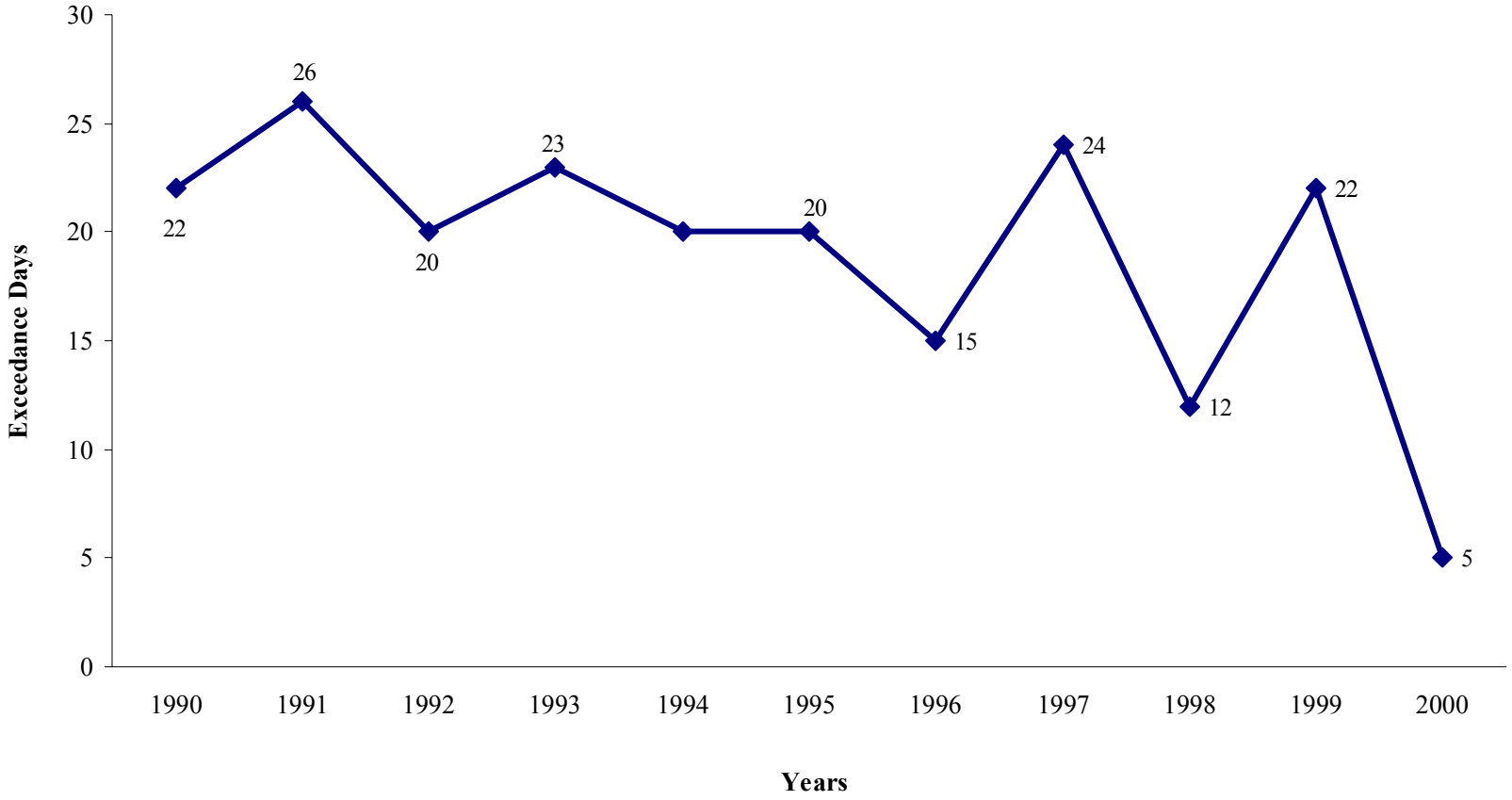
Exposure to air that does not meet the U.S. EPA's health based standards for ozone
U.S. (2001), HP 2010



Objective: 8-1a Reduce the proportion of persons exposed to air that does not meet the U.S. Environmental Protection Agency's health-based standards for ozone

Sources: U.S. Environmental Protection Agency. Aerometric Information Retrieval System. 2001.

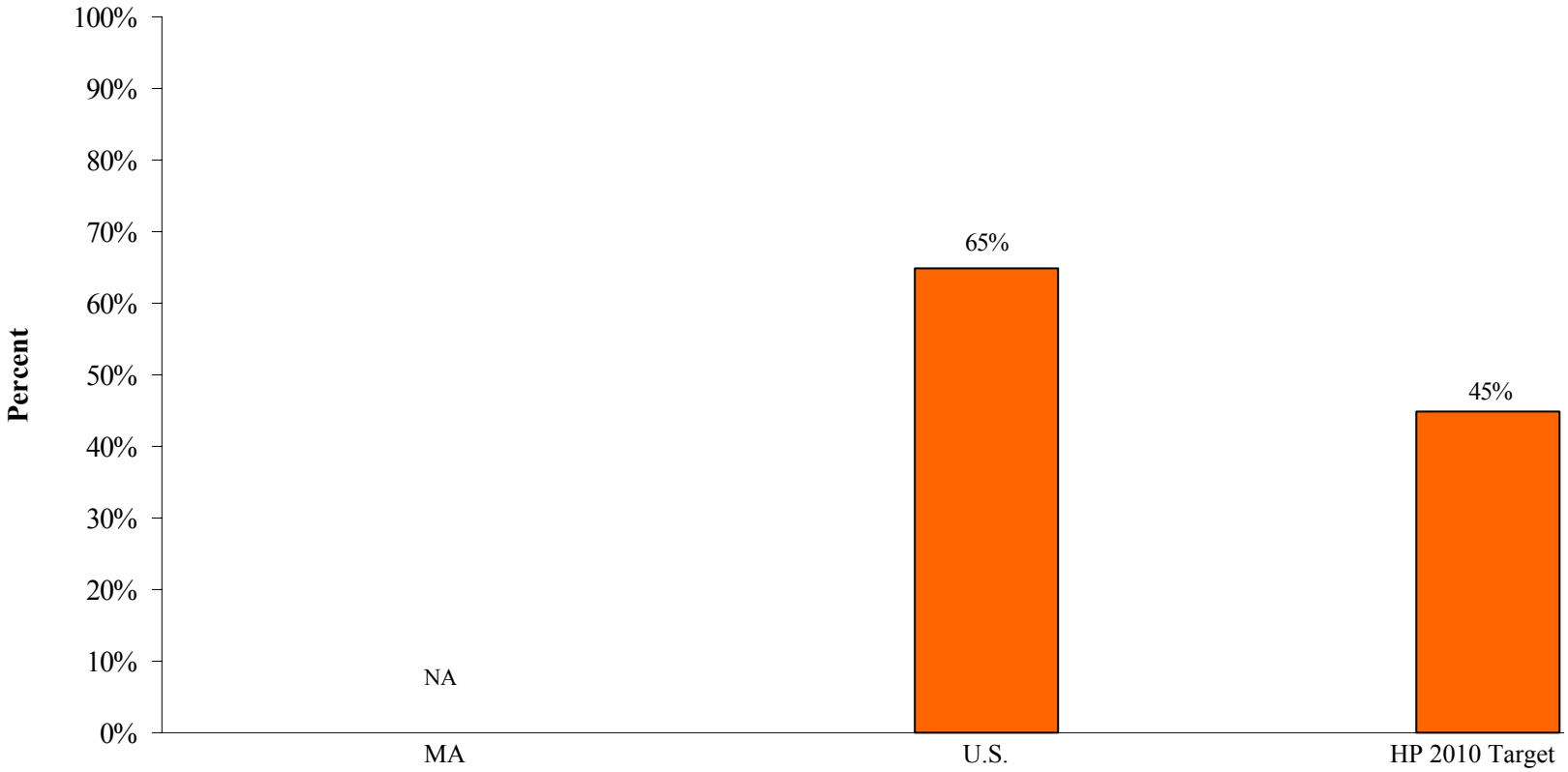
Historical Exceedance Days of EPA's 8-hour Average Ground Level Ozone Standard MA (1990-2000)



Objective: 8-1a Reduce the proportion of persons exposed to air that does not meet the U.S. Environmental Protection Agency's health-based standards for ozone

Sources: U.S. Environmental Protection Agency. Aerometric Information Retrieval System. 2001. Environmental Protection Agency, New England. Historical Exceedance Days in New England of EPA's 8-hr Average Ground-Level Ozone Standard: 1990-2000.

Exposore to environmental tobacco smoke
U.S. (1988-1994), HP 2010

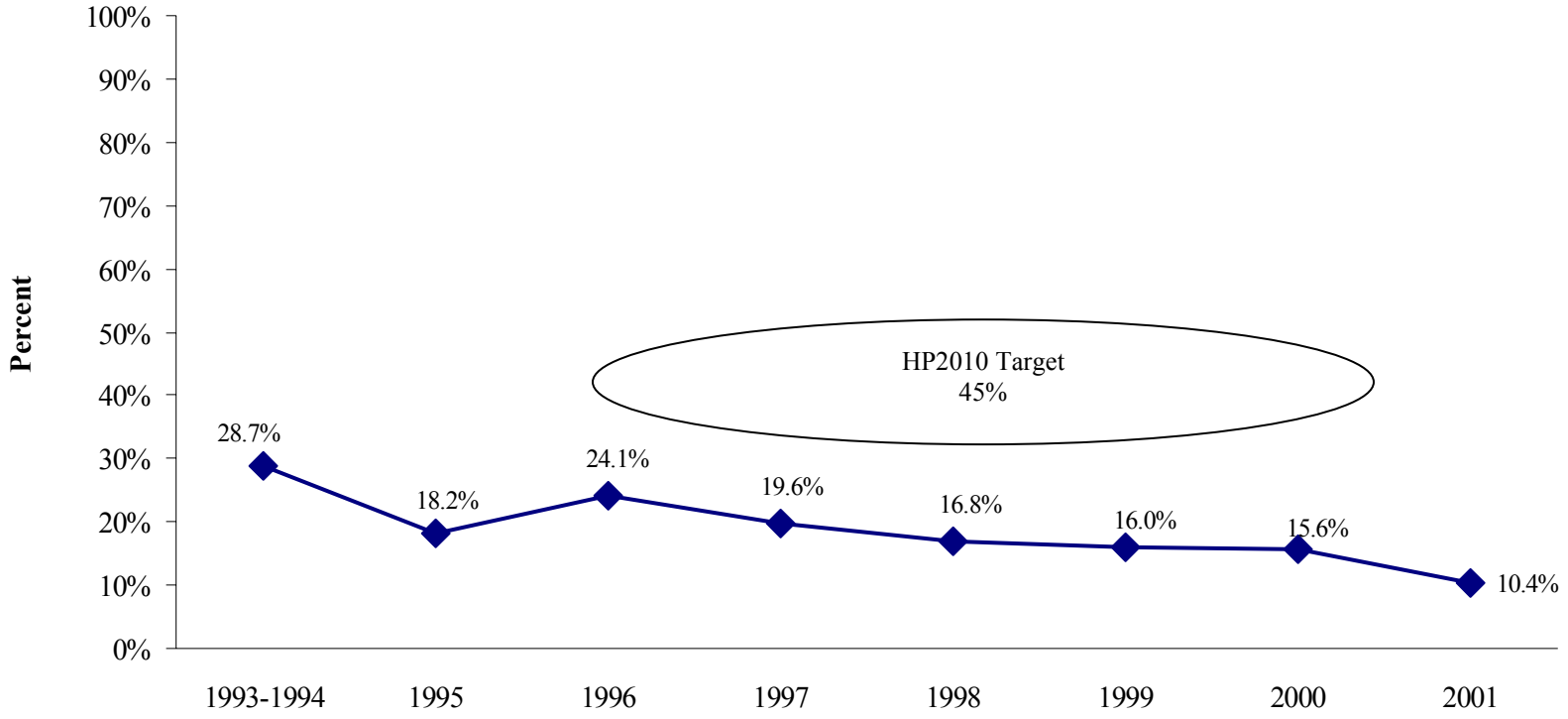


Objective: 27-10 Reduce the proportion of nonsmokers exposed to environmental tobacco smoke

Sources: Centers for Disease Control and Prevention. National Center for Health Statistics. National Health and Nutrition Examination Survey. 1988-1994.

Exposure: Serum cotinine level above 0.10 ng/ml.

Exposure* to Environmental Tobacco Smoke at Home or at Work
Adults Nonsmokers
MA (1993-2001)

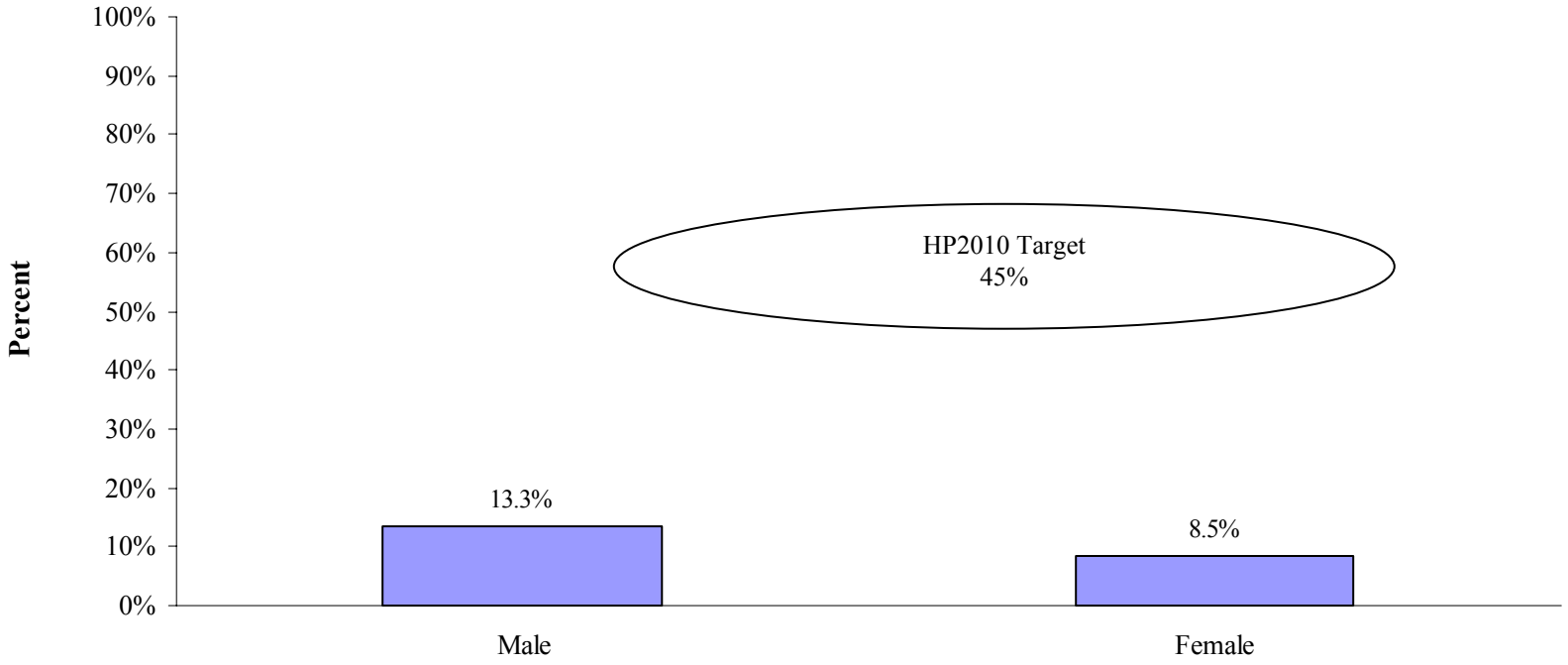


Objective: 27-10 Reduce the proportion of nonsmokers exposed to environmental tobacco smoke

Source: Massachusetts Tobacco Survey (1993-1994), Massachusetts Adult Tobacco Survey (1995-2000), UMASS Tobacco Study (2001).

* Exposure defined as: Exposed to ETS for more than 1 hour at home and/or at work per week.

Exposure* to Environmental Tobacco Smoke at Home or at Work
Adults Nonsmokers by Gender
MA (2001)

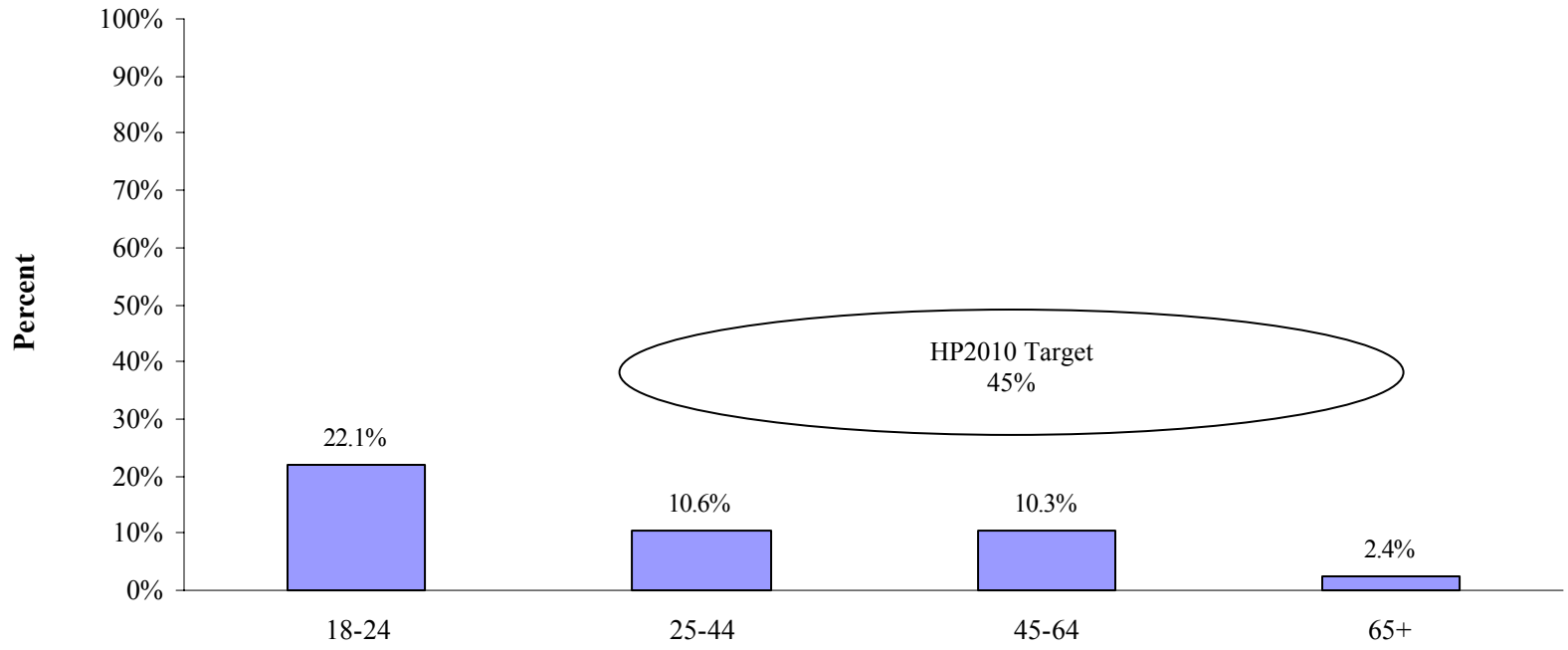


Objective: 27-10 Reduce the proportion of nonsmokers exposed to environmental tobacco smoke

Source: UMASS Tobacco Study, 2001.

* Exposure defined as: Exposed to ETS for more than 1 hour at home and/or at work per week.

Exposure* to Environmental Tobacco Smoke at Home or at Work
Adults Nonsmokers by Age groups
MA (2001)

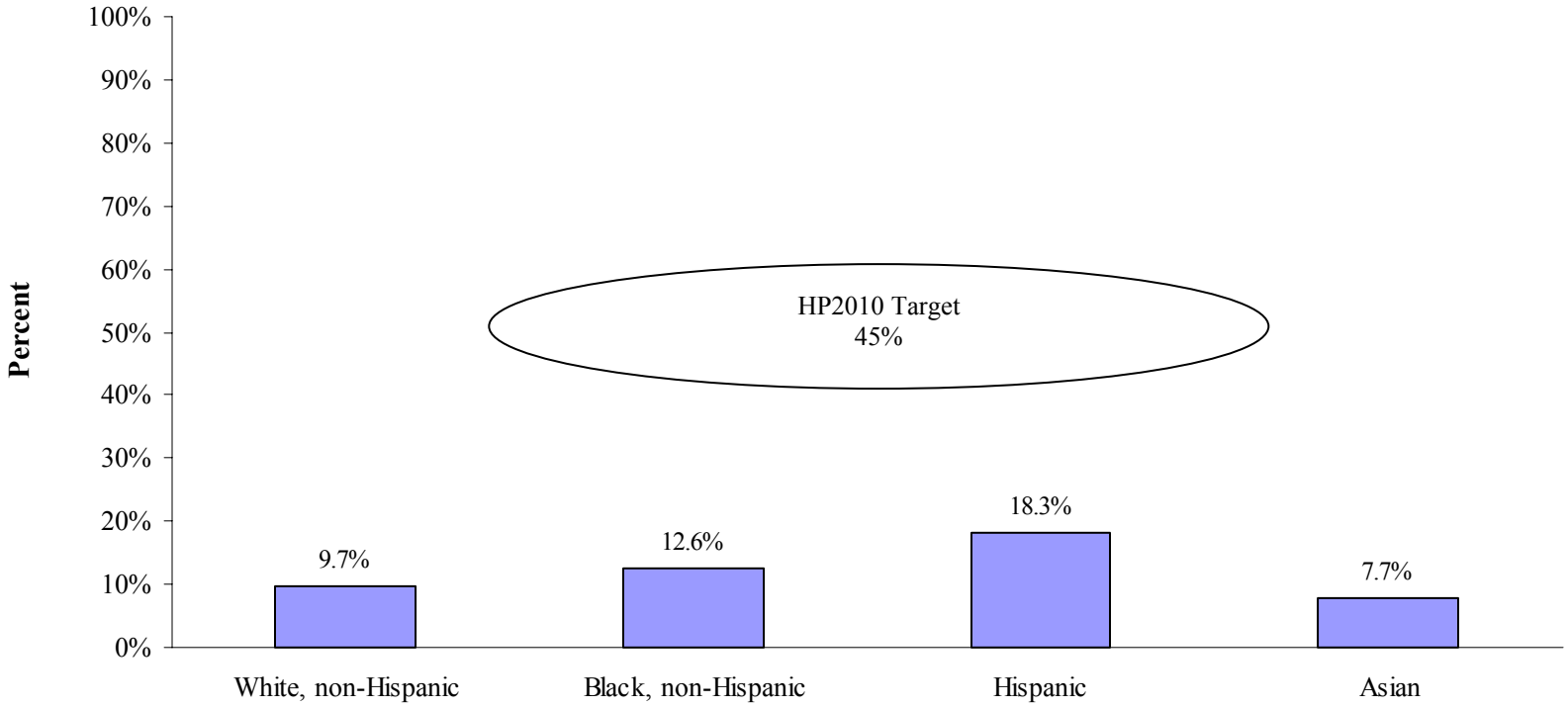


Objective: 27-10 Reduce the proportion of nonsmokers exposed to environmental tobacco smoke

Source: UMASS Tobacco Study, 2001.

* Exposure defined as: Exposed to ETS for more than 1 hour at home and/or at work per week.

Exposure* to Environmental Tobacco Smoke at Home or at Work
Adults Nonsmokers by Race/Hispanic Ethnicity
MA (2001)



Objective: 27-10 Reduce the proportion of nonsmokers exposed to environmental tobacco smoke

Source: UMASS Tobacco Study, 2001.

* Exposure defined as: Exposed to ETS for more than 1 hour at home and/or at work per week.

Immunization

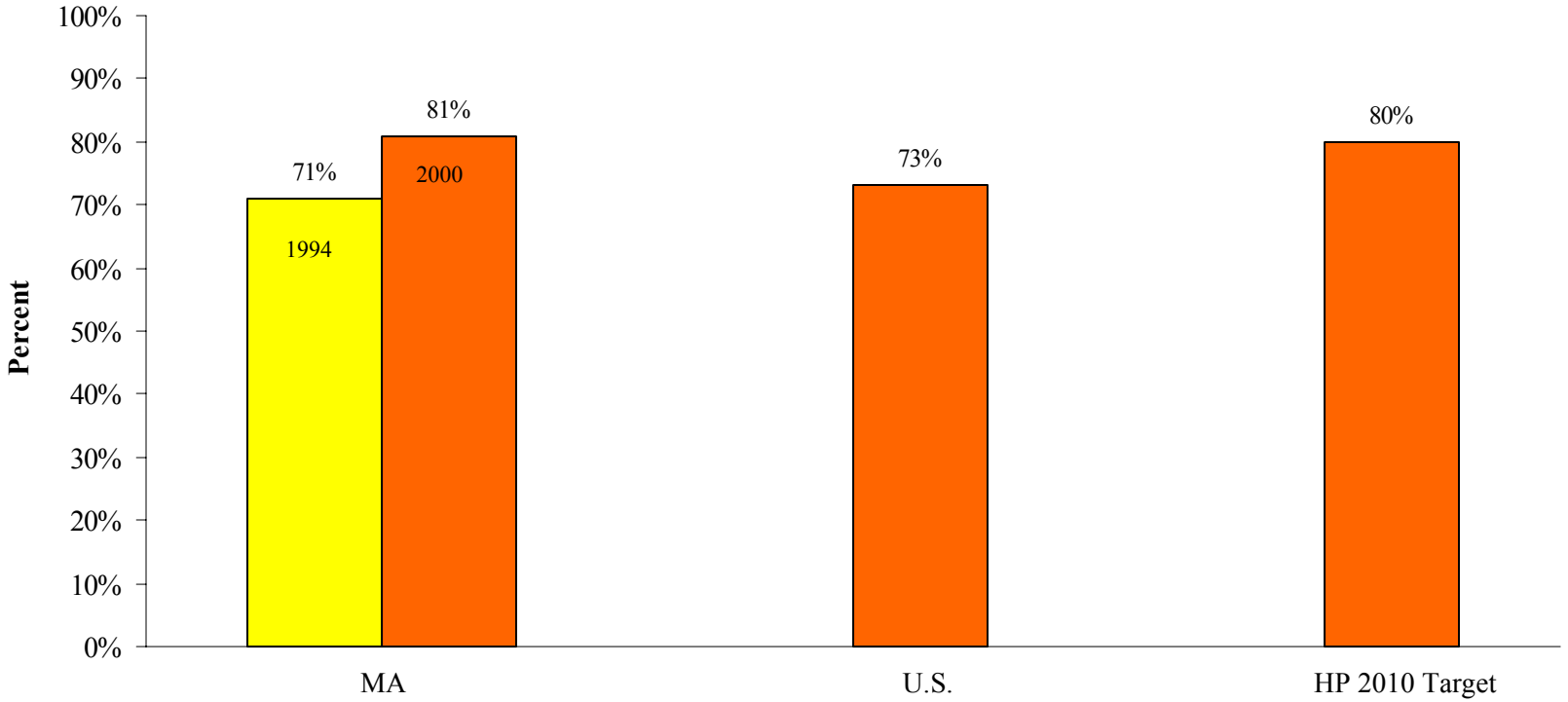
A note about this indicator:

The objectives selected to measure progress among children and adults for this Leading Health Indicator are presented below. These are only indicators and do not represent all the immunization and infectious diseases objectives included in Healthy People 2010.

14-24. Increase the proportion of young children who receive all vaccines that have been recommended for universal administration for at least 5 years.
14-29a,b. Increase the proportion of noninstitutionalized adults who are vaccinated annually against influenza and ever vaccinated against pneumococcal disease.

Data Sources: MA BCDC Immunization Files and the Behavioral Risk Factor Surveillance System (BRFSS)

Fully Immunized[1] Young Children
Aged 19-35 Months
MA (1994, 2000), U.S. (2000), HP 2010

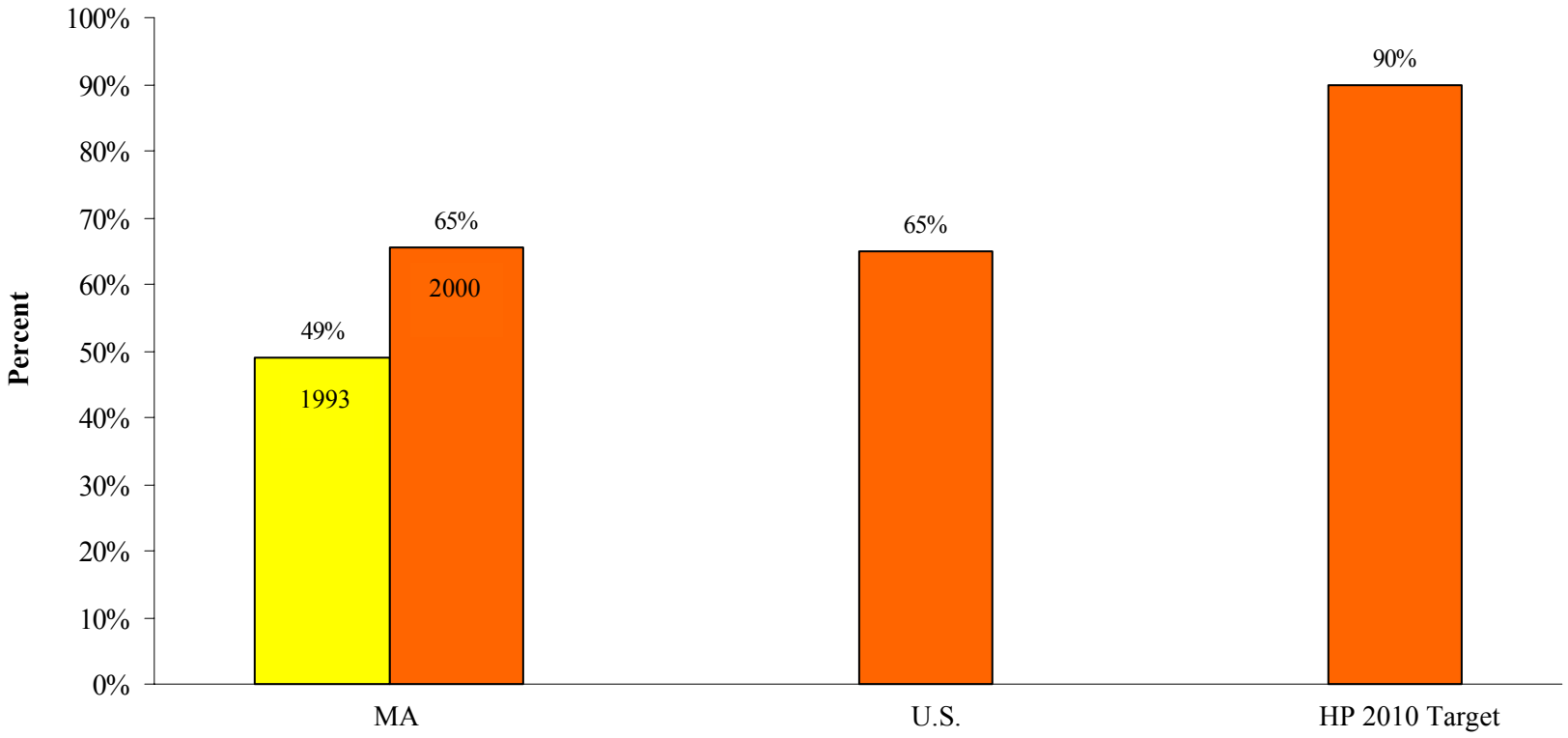


Objective: 14-24 Increase the proportion of young children who receive all vaccines that have been recommended for universal administration for at least 5 years

[1] Four or more doses of diphtheria/tetanus/acellular pertussis (DTaP), three or more doses of polio vaccine, one or more dose measles/mumps/rubella (MMR), three or more doses of Haemophilus influenzae type b (Hib) vaccine, and three or more doses of hepatitis B (Hep B) vaccine.

Sources: Centers for Disease Control and Prevention, National Center for Health Statistics and National Immunization Program. National, State, and Urban Area Vaccination Coverage Levels Among Children Aged 19-35 Months-United States, 1994-2000. (www.cdc.gov/nip/coverage/data.htm).

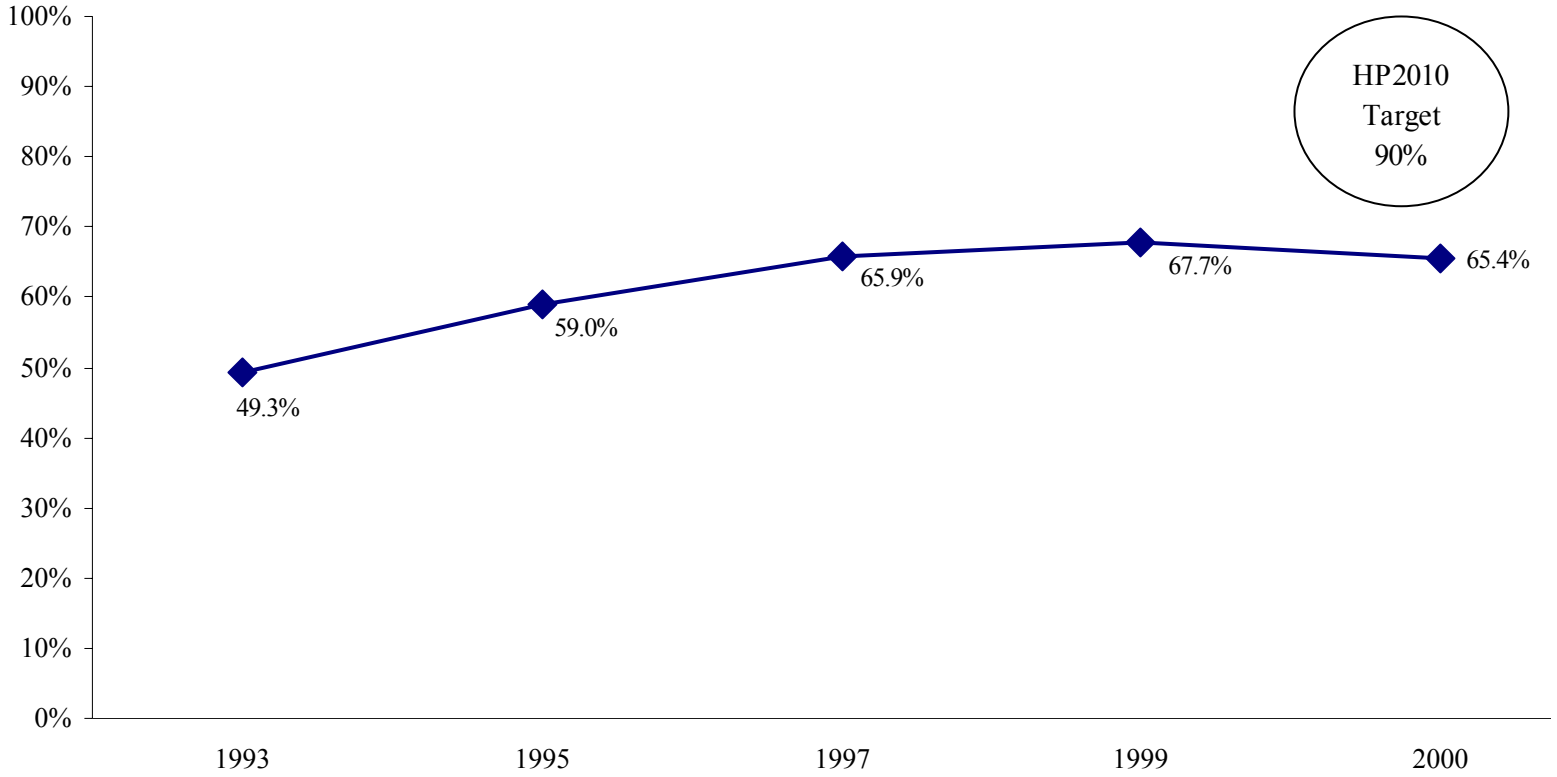
Noninstitutionalized Adults Aged 65+ yrs Who Received Influenza Vaccine in the Past 12 Months MA (1993, 2000), U.S. (2000), HP 2010



Objective: 14-29a Increase the proportion of noninstitutionalized adults who are vaccinated annually against influenza

Sources: Centers for Disease Control and Prevention, National Center for Health Statistics and National Immunization Program. National Immunization Survey. 2000.
Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRSS. 1993, 2000.

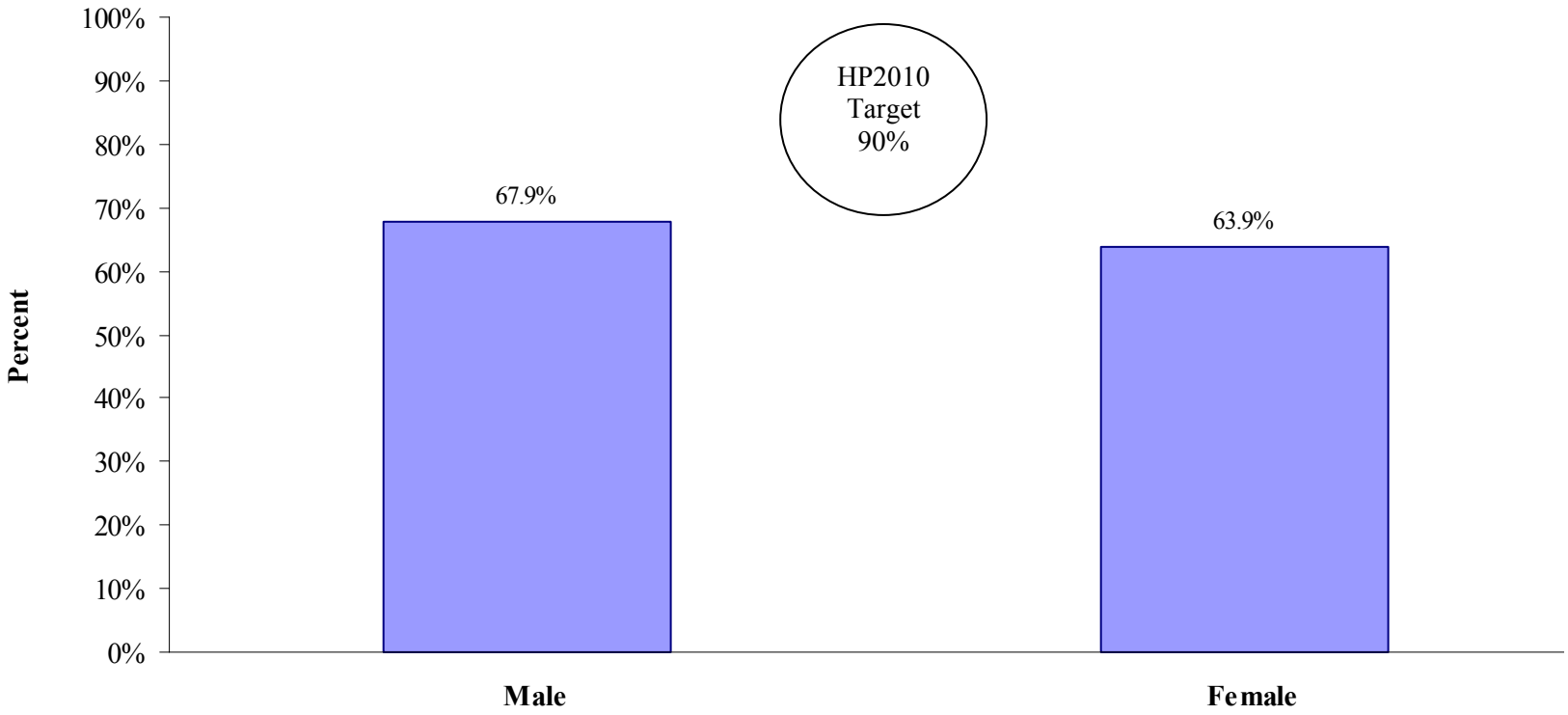
Percentage of Noninstitutionalized adults aged 65+ yrs who received a flu shot in the past year MA (1993-2000)



Objective: 14-29a Increase the proportion of noninstitutionalized adults who are vaccinated annually against influenza

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRSS. 2000.

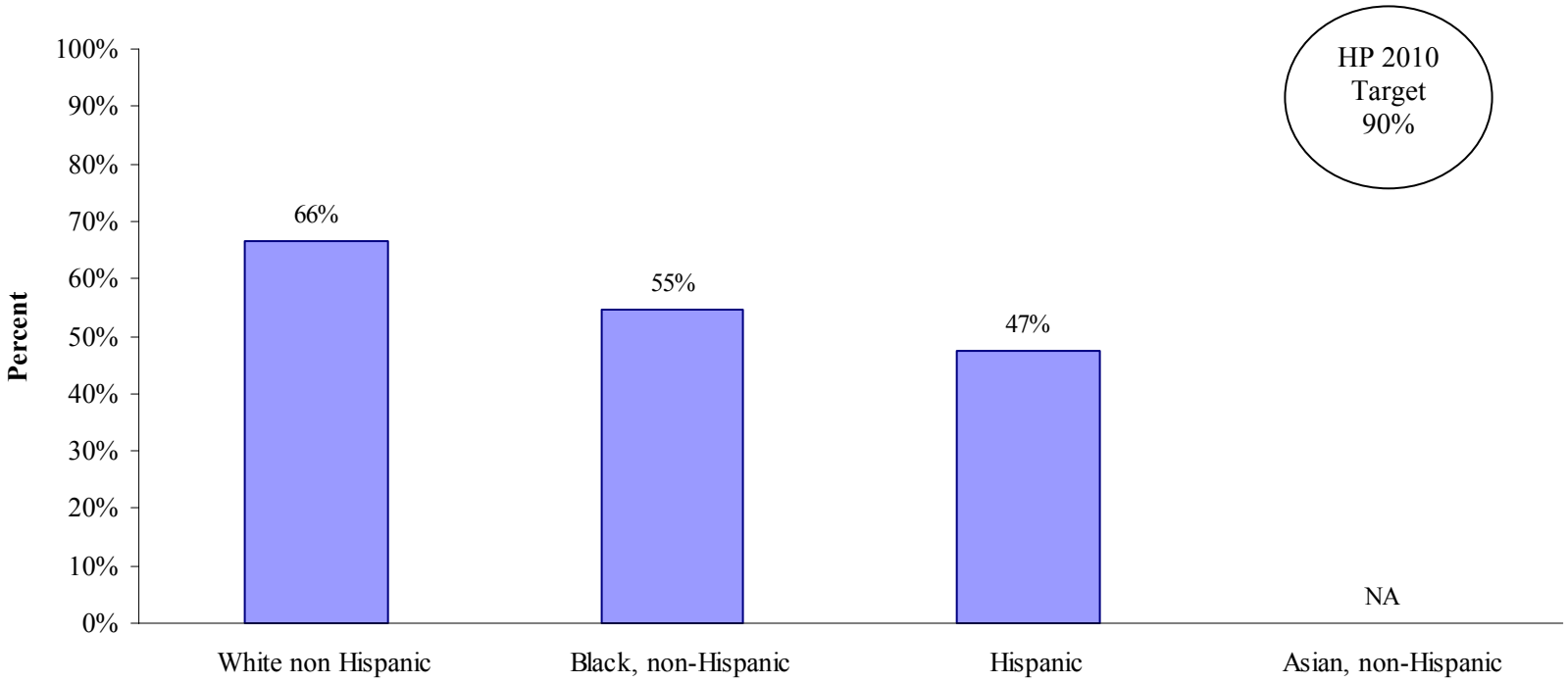
Percentage of Noninstitutionalized adults aged 65+ yrs who received a flu shot in the past year by Gender MA (2000)



Objective: 14-29a Increase the proportion of noninstitutionalized adults who are vaccinated annually against influenza

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRSS. 2000.

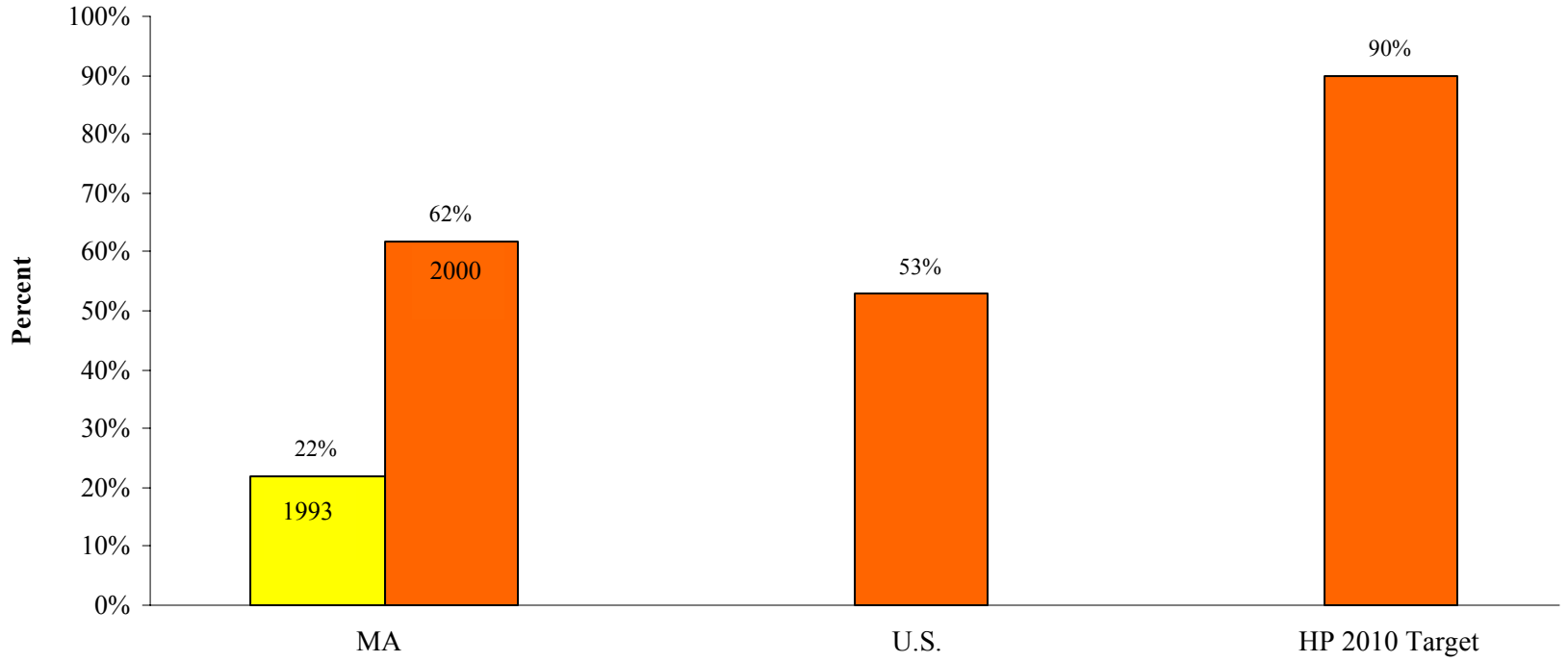
Percentage of Noninstitutionalized adults aged 65+ yrs who received a flu shot in the past year by Race/Hispanic Ethnicity MA (2000)



Objective: 14-29a Increase the proportion of noninstitutionalized adults who are vaccinated annually against influenza

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRSS. 2000.

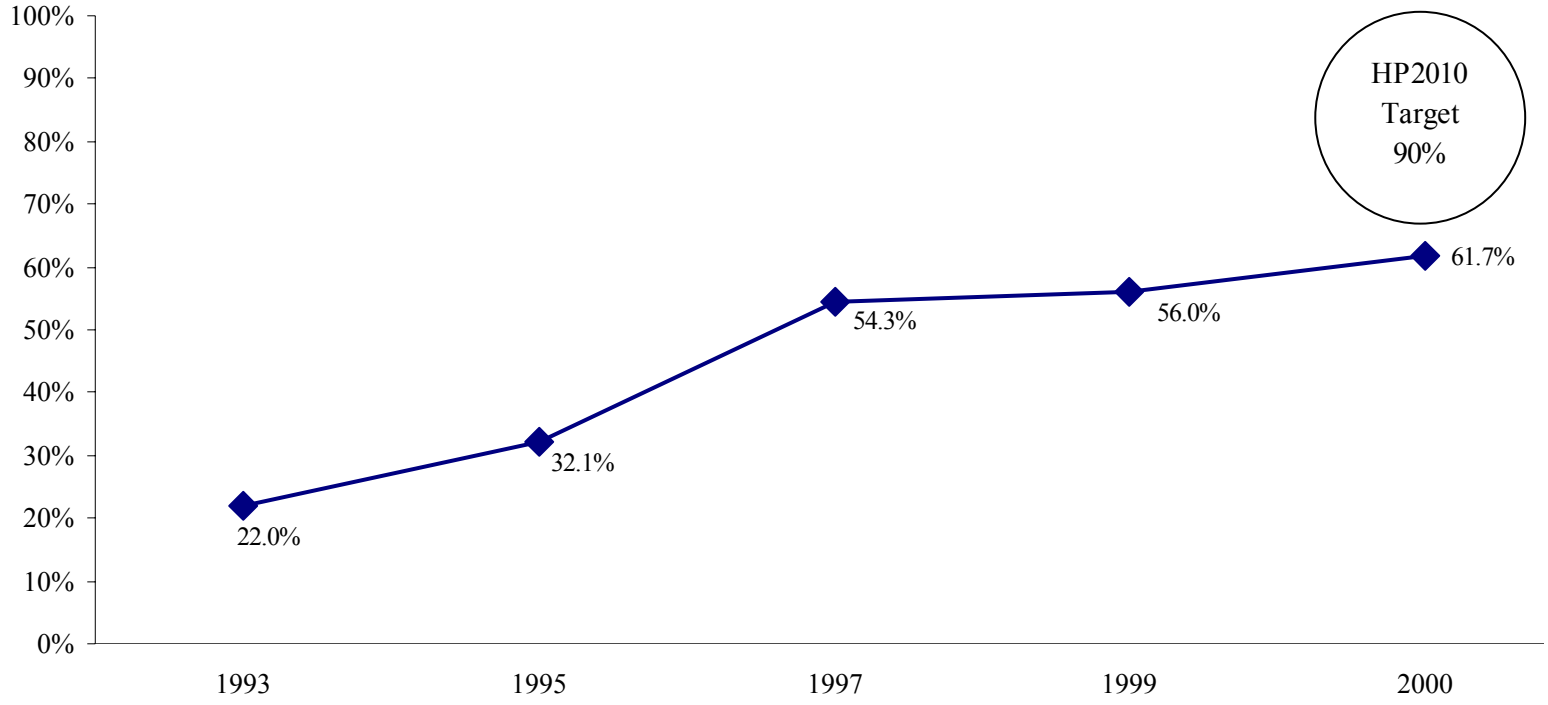
Noninstitutionalized Adults Aged 65+ yrs
Who ever Received Pneumococcal Vaccine
MA (1993, 2000), U.S. (2000), HP 2010



Objective: 14-29b Increase the proportion of noninstitutionalized adults who are ever vaccinated against pneumococcal disease

Sources: Centers for Disease Control and Prevention, National Center for Health Statistics and National Immunization Program. National Immunization Survey. 2000.
Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRSS. 1993, 2000.

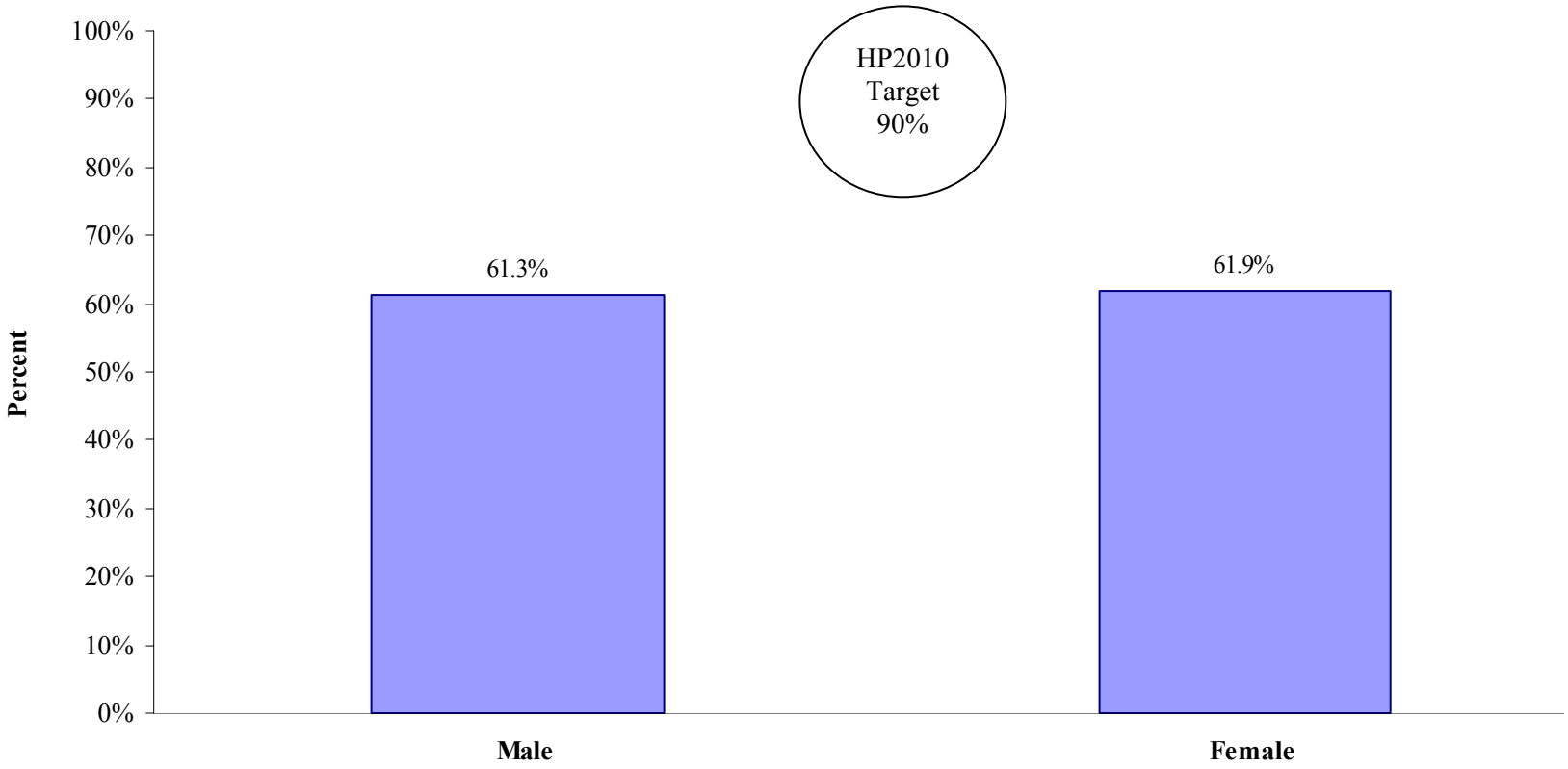
Percentage of Noninstitutionalized adults aged 65+ yrs who ever received a pneumonia vaccine MA (1993-2000)



Objective: 14-29b Increase the proportion of noninstitutionalized adults who are ever vaccinated against pneumococcal disease

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRSS. 2000.

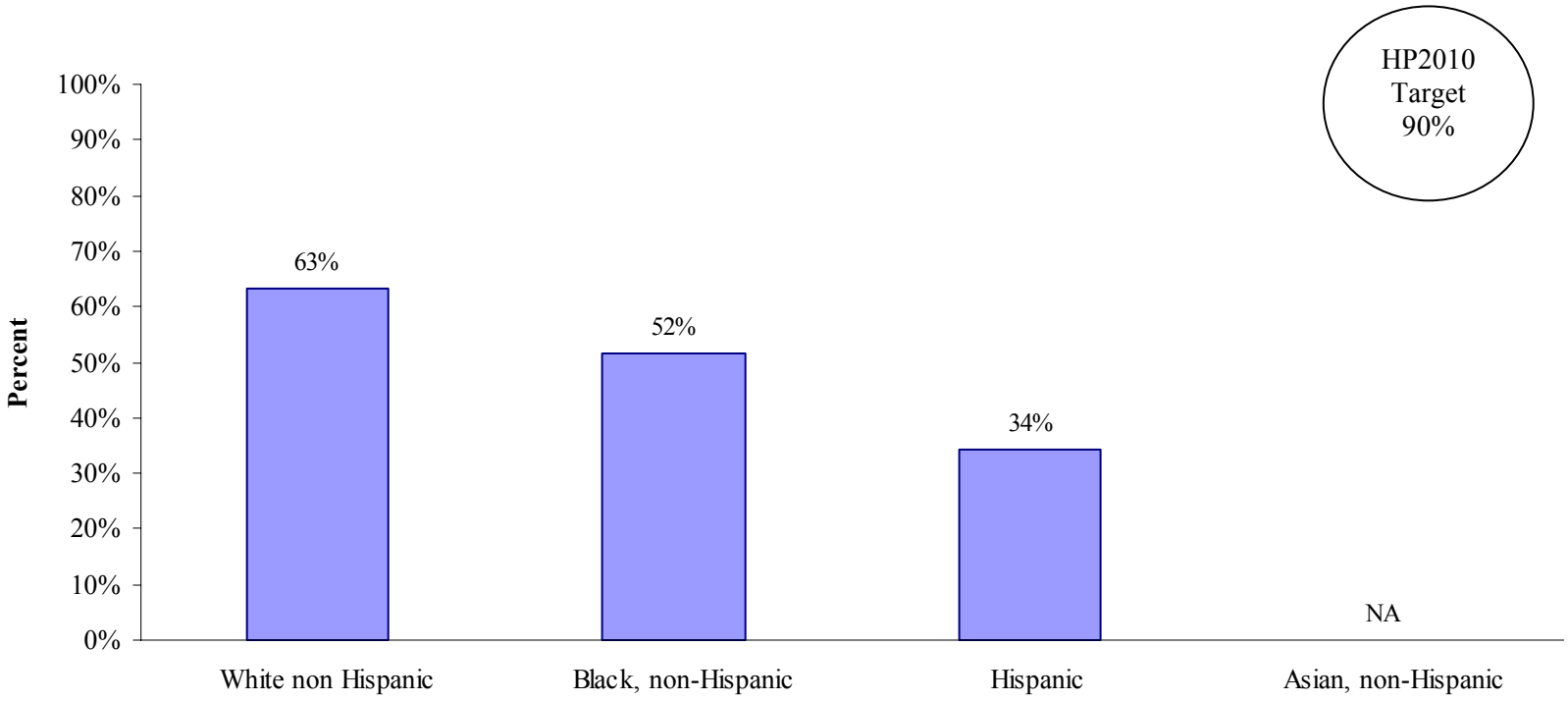
Percentage of Noninstitutionalized adults aged 65+ yrs who ever received a pneumonia vaccine by Gender MA (2000)



Objective: 14-29b Increase the proportion of noninstitutionalized adults who are ever vaccinated against pneumococcal disease

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRSS. 2000.

Percentage of Noninstitutionalized adults aged 65+ yrs who ever received a pneumonia vaccine by Race/Hispanic Ethnicity MA (2000)



Objective: 14-29b Increase the proportion of noninstitutionalized adults who are ever vaccinated against pneumococcal disease

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

Access to Health Care

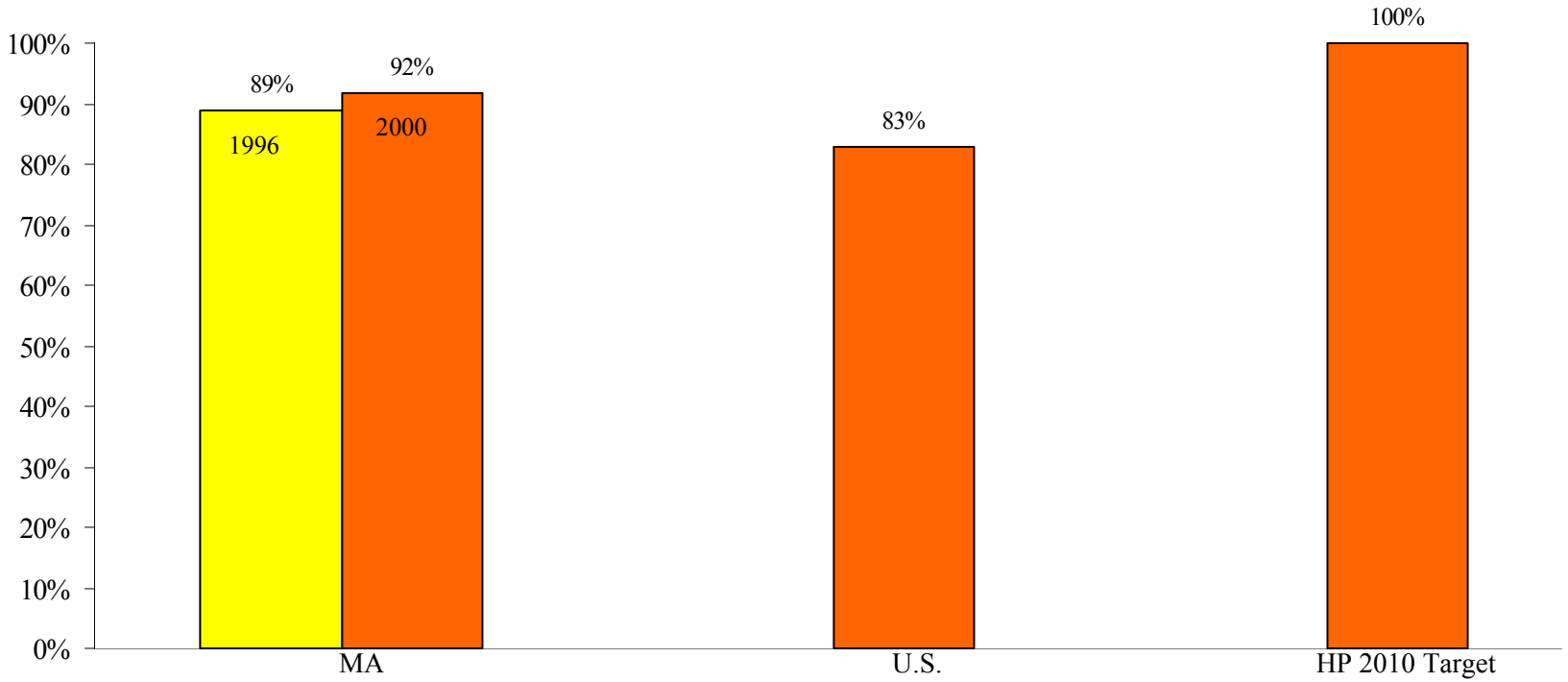
A note about this indicator:

The objectives selected to measure progress for this Leading Health Indicator are presented below. These are only indicators and do not represent all the quality health care objectives included in Healthy People 2010.

1-1. Increase the proportion of persons with health insurance.
1-4a. Increase the proportion of persons who have a specific source of ongoing care.
16-6a. Increase the proportion of pregnant women who begin prenatal care in the first trimester of pregnancy.

Data Sources: Behavioral Risk Factor Surveillance System (BRFSS) and Birth Certificates.

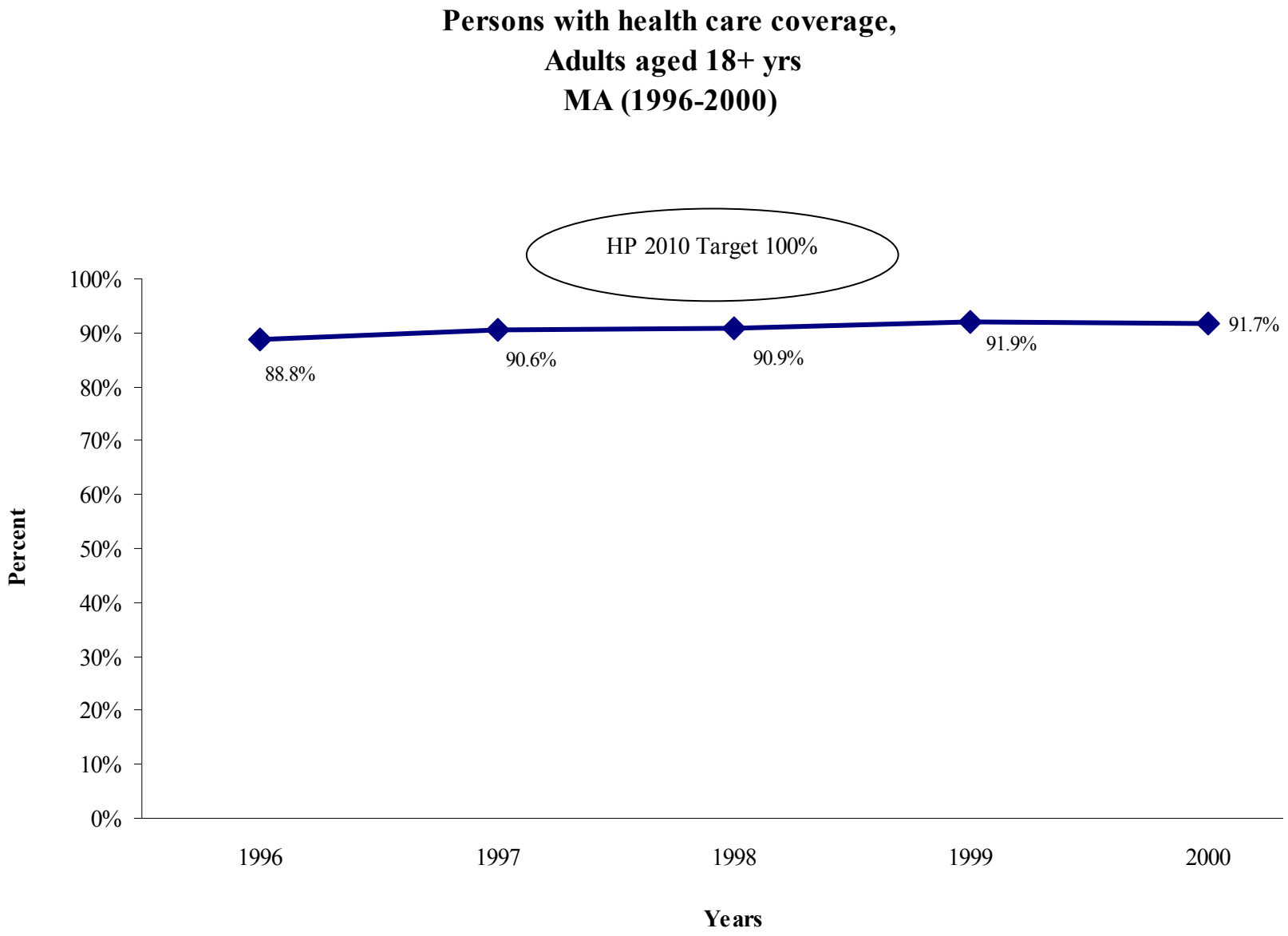
Persons with health care coverage,
Adults aged 18+ yrs
MA (1996, 2000), U.S. (2000), HP 2010



Objective: 1-1 Increase the proportion of persons with health insurance

Sources: Centers for Disease Control and Prevention, National Center for Health. National Health Interview Survey. 2000.
Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1996, 2000.

Health care coverage: Responded “yes” to the question “Do you have any kind of health care plan”.



Objective: 1-1 Increase the proportion of persons with health insurance

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1996-2000.

Health care coverage: Responded "yes" to the question "Do you have any kind of health care plan".

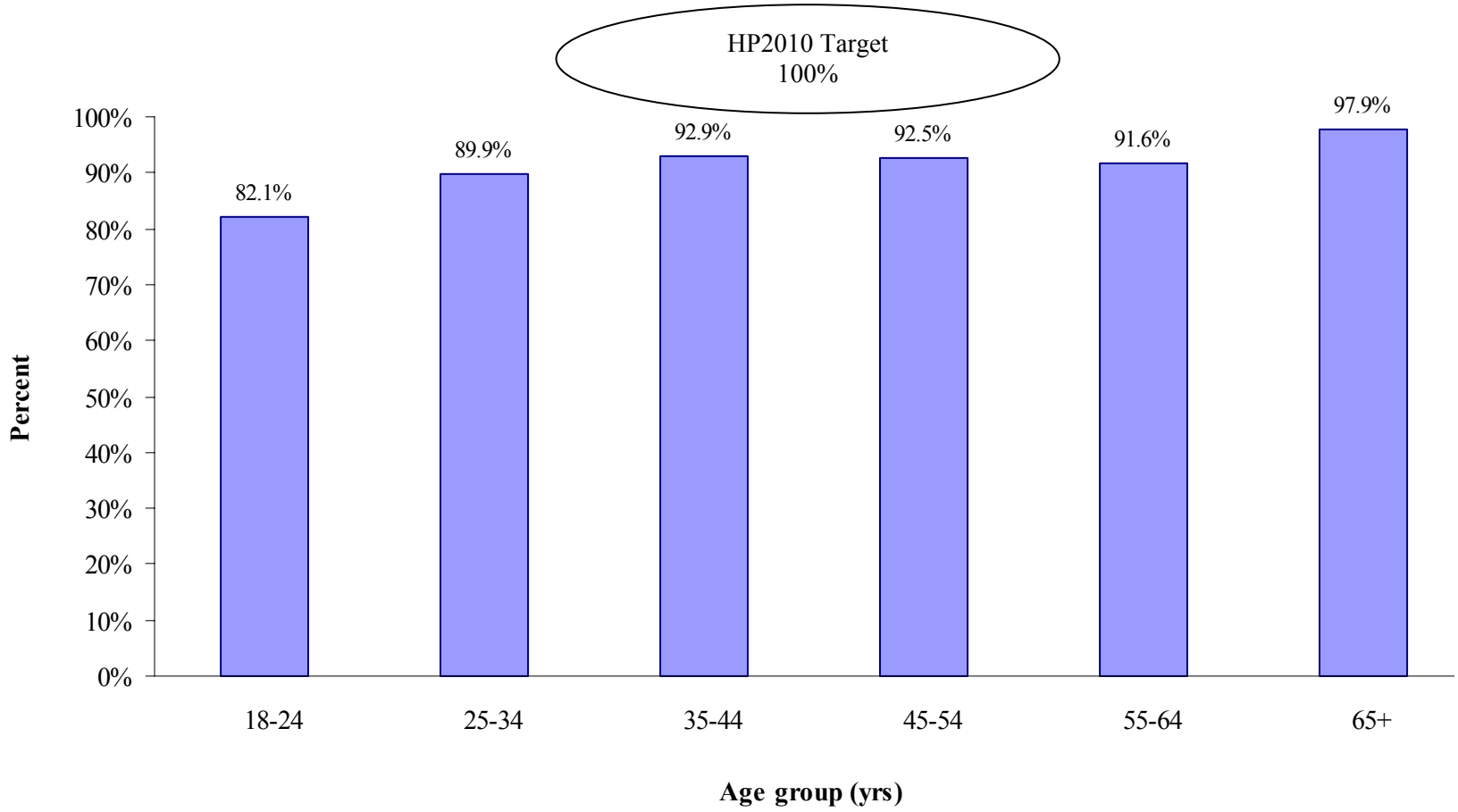
Persons with health care coverage,
Persons Ages 18+ years by Gender
MA (2000)

Objective: 1-1 Increase the proportion of persons with health insurance

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

Health care coverage: Responded "yes" to the question "Do you have any kind of health care plan".

Persons with health care coverage,
Persons Ages 18+ years by Age Group
MA (2000)

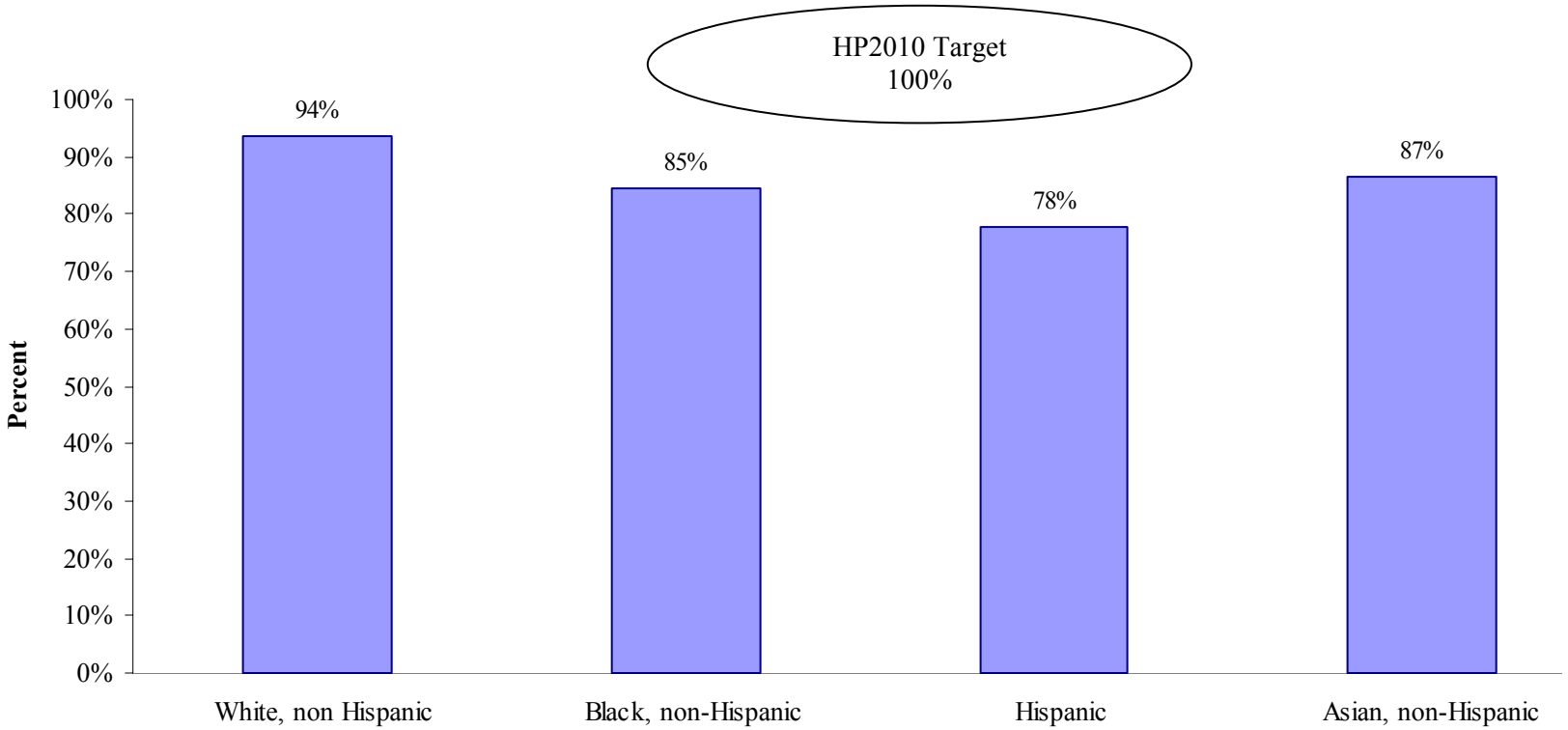


Objective: 1-1 Increase the proportion of persons with health insurance

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 2000.

Health care coverage: Responded "yes" to the question "Do you have any kind of health care plan".

Persons with health care coverage,
Persons Ages 18+ years by Race/Hispanic Ethnicity
MA (2000)

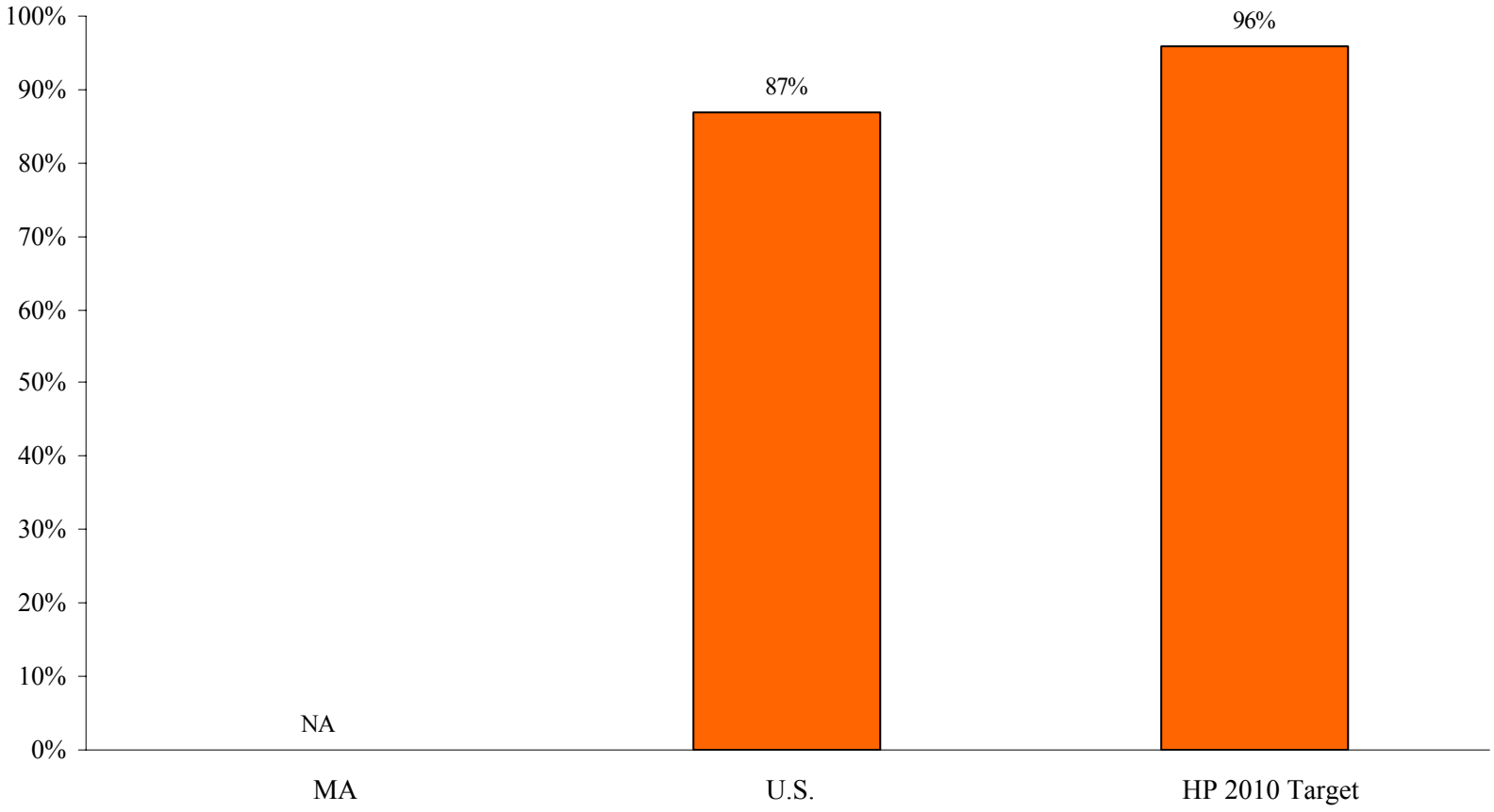


Objective: 1-1 Increase the proportion of persons with health insurance

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. BRFSS. 1996-2000.

Health care coverage: Responded "yes" to the question "Do you have any kind of health care plan".

Persons of all ages with a specific source of ongoing primary care, MA, U.S. (2000), HP 2010

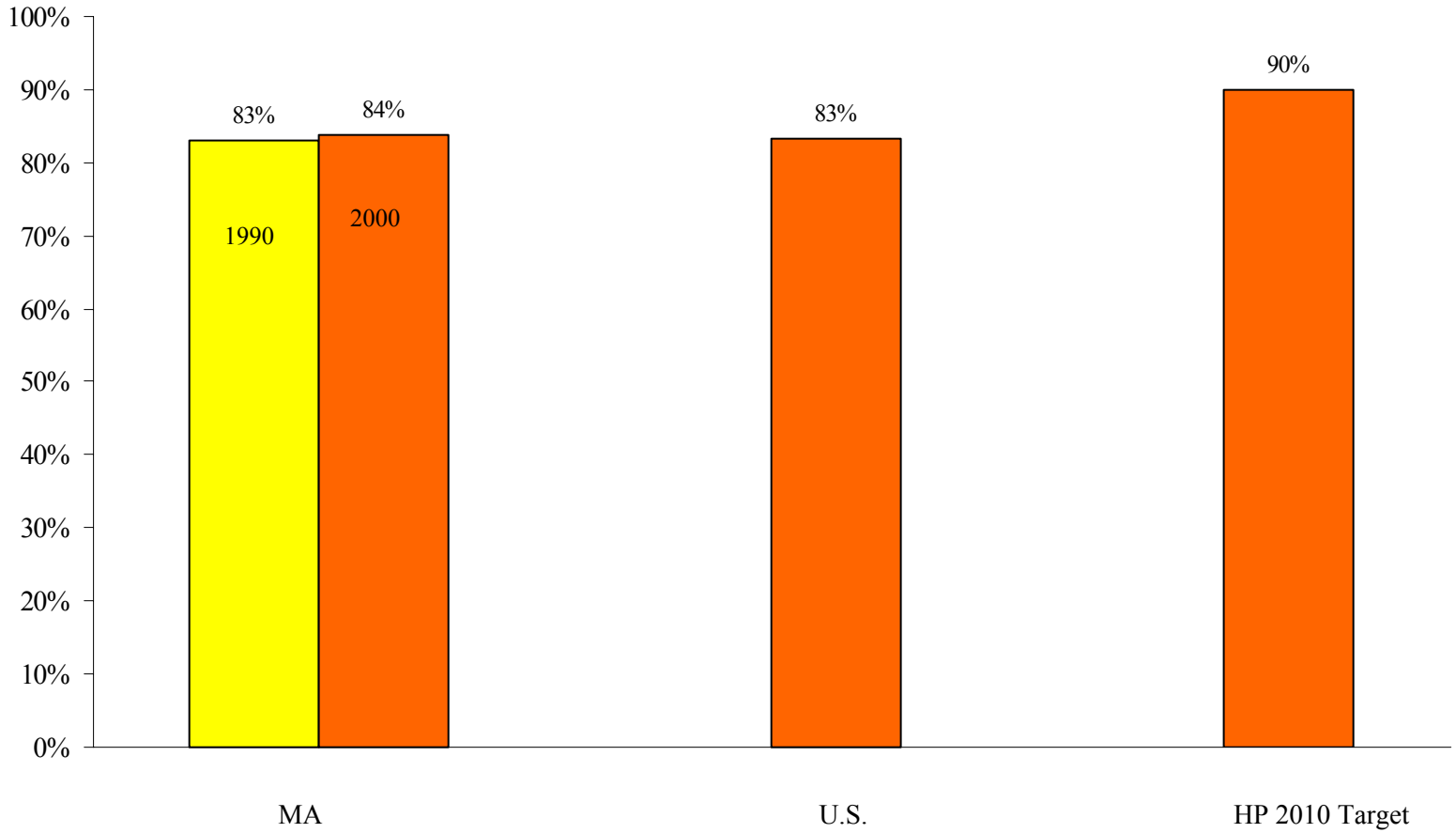


Objective: 1-4a Increase the proportion of persons who have a specific source of ongoing care

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey. 2000.

*Percentages are age-adjusted to the 2000 US Population.

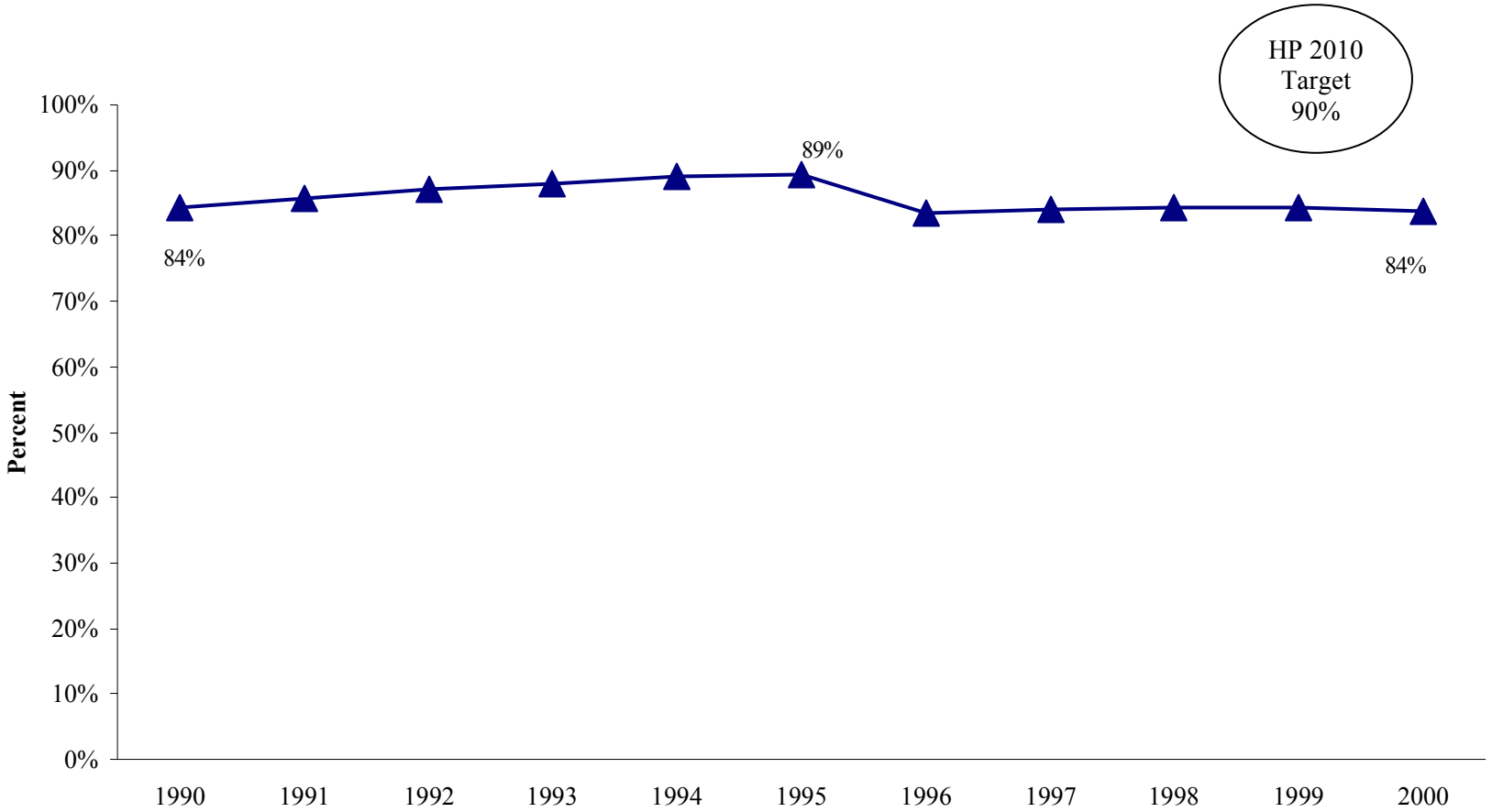
Females who received prenatal care in first trimester
MA (1990,2000), U.S. (2000), HP2010



Objective: 16-6a Increase the proportion of pregnant women who begin prenatal care in the first trimester of pregnancy

Sources: Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System. 2000.
MA Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Births 1990, 2000.

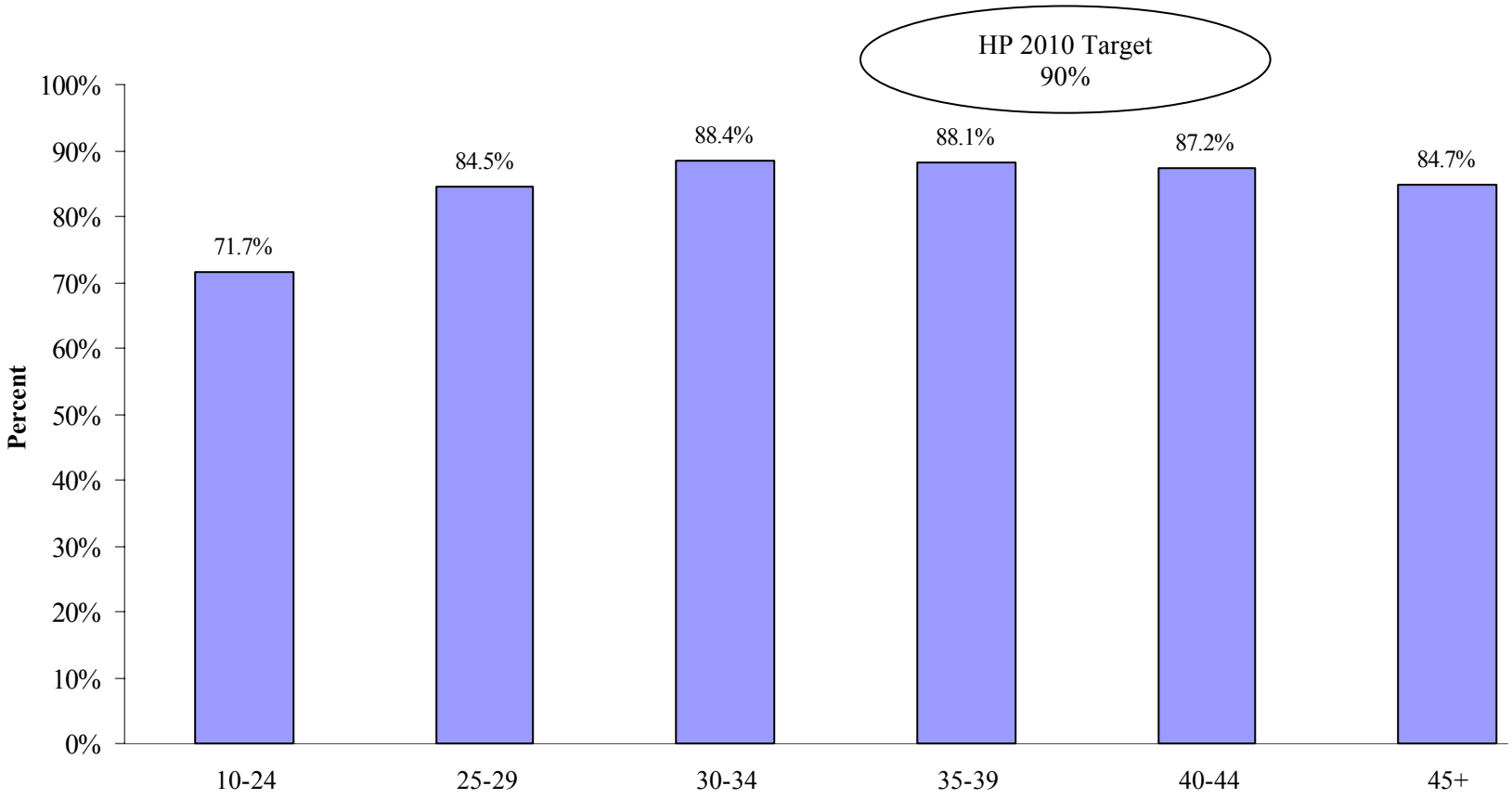
Females who received prenatal care in first trimester of pregnancy MA (1990-2000)



Objective: 16-6a Increase the proportion of pregnant women who begin prenatal care in the first trimester of pregnancy

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Births 1990-2000.

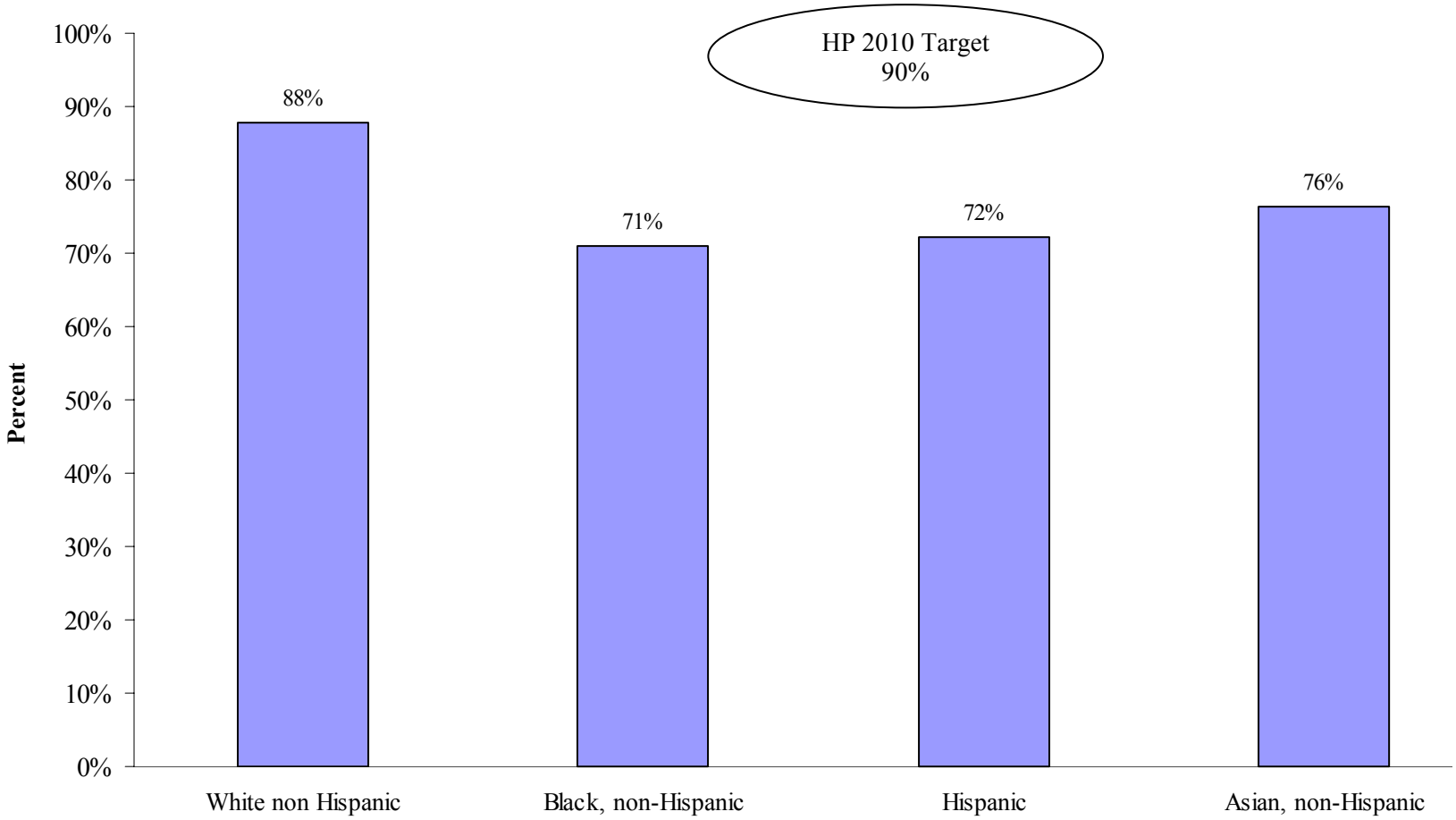
Females who received prenatal care in first trimester of pregnancy by Age Group Massachusetts (2000)



Objective: 16-6a Increase the proportion of pregnant women who begin prenatal care in the first trimester of pregnancy

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Births 1990-2000.

Females who received prenatal care in first trimester of pregnancy by Race/Hispanic Ethnicity Massachusetts (2000)



Objective: 16-6a Increase the proportion of pregnant women who begin prenatal care in the first trimester of pregnancy

Source: Massachusetts Department of Public Health. Bureau of Health Statistics, Research and Evaluation. Massachusetts Births 2000.

Secondary Measures

Leading Health Indicator			Secondary Indicators		
PHYSICAL ACTIVITY					
Indicator	Source	Value	Indicator	Source	Value
Increase the proportion of adolescents who engage in vigorous physical activity	YRBS	**63% (2001)**	Overweight rates	YRBS	**15%** at risk of becoming overweight and **10%** definitely overweight **(2001)**
			Enrollment in team sports, after school activities	YRBS	Actively Participate in exercise/sports team=**54% (2001)** Attended Physical Education at least once during regular school weeks=**68% (2001)**
			Hours ot TV viewing	YRBS	Watched TV less than 3 hrs/school day=**69.6% (2001)**
Increase the proportion of adults who engage regularly in moderate physical activity	BRFSS	**23.5% (2000)**	Obesity rates (persons ages 20+)	BRFSS	**16.9%** (2000)
			CHD mortality rate	Vitals	**150 deaths/100,000 (2000)**
			Heart Disease mortality rate	Vitals	**218 deaths/100,000 (2000)**
			Diabetes mortality rate	Vitals	**19.7 deaths / 100,000 (2000)**
			CHD hospitalization rate	MHDDS	**630 hospitalizations /100,000 (2000)**
			Stroke hospitalization rate	MHDDS	**265.8 hospitalizations /100,000 (2000)**
			Diabetes hospitaliation rate	MHDDS	**118 hospitalizations /100,000 (1999)**
			HBP rates	BRFSS	Ever been told had HBP=**21% (1999)**

Leading Health Indicator			Secondary Indicators		
OBESITY					
Indicator	Source	Value	Indicator	Source	Value
Reduce the proportion of children and adolescents who are overweight or obese.	YRBS	**15%** at risk of becoming overweight and **10%** definitely overweight **(2001)**	Diabetes hospitalization rate (ages less than 20 yrs)	MHDDS	**30.6 hospitalizations / 100,000 (1999)**
			Endocrine/metabolic/ nutritional hospitalization rate	MHDDS	**163 hospitalizations / 100,000 (1999)**
Reduce the proportion of adults who are obese.	BRFSS	**16.9%** (2000) (persons ages 20+)	CHD mortality rate	Vitals	**150 deaths/100,000 (2000)**
			Stroke mortality rate	Vitals	**51 deaths/100,000 (2000)**
			Diabetes mortality rate	Vitals	**19.7 deaths/ 100,000 (2000)**

Leading Health Indicator			Secondary Indicators		
OBESITY					
Indicator	Source	Value	Indicator	Source	Value
Reduce the proportion of adults who are obese.	BRFSS	**16.9%** (2000) (persons ages 20+)	HBP rates	BRFSS	Ever been told had HBP=**21% (1999)**
			High cholesterol rates	BRFSS	Ever been told had high cholesterol=**29% (1999)**
			Diabetes rate	BRFSS	Ever been told had diabetes= **5% (1999)**
			Fruit and vegetable consumption	BRFSS	**30.5% (2000)**
			CHD hospitalization rate	MHDDS	**630 hospitalizations /100,000 (2000)**
			Stroke hospitalization rate	MHDDS	**265.8 hospitalizations /100,000 (2000)**
			Diabetes hospitaliation rate	MHDDS	**118 hospitalizations /100,000 (1999)**
			Colorectal Cancer Incidence Rate	Cancer Registry	**86 counts /100,000 (1998)**
TOBACCO USE					
Indicator	Source	Value	Indicator	Source	Value
Reduce cigarette smoking by adolescents.	YRBS	**26% (2001)**			
Reduce cigarette smoking by adults.	BRFSS	**20% (2000)**	Lung cancer mortality rate	Vitals	**56 deaths/ 100,000 (2000)**
			Lung cancer incidence rate	Cancer Registry	**101 counts /100,000 (1998)**
			Heart Disease hospitalization rate	MHDDS	**1,278 hospitalizations /100,000 (2000)**
SUBSTANCE ABUSE					
Indicator	Source	Value	Indicator	Source	Value
Increase the proportion of adolescents not using alcohol or any illicit drugs during the past 30 days.	YRBS	**43% (2001)**	Alcohol/substance hospitalization rate (15-19 years old)	MHDDS	**157 hospitalizations / 100,000 (1999)**
			School Dropout Rate	Department of Education	**4% (2000-2001)**
Reduce the proportion of adults using any illicit drug during the past 30 days.	BRFSS	**7% (2001)**	Chronic liver disease and cirrhosis mortality rate	Vitals	**5.3 deaths/ 100,000 (2000)**
			Drug-induced mortality rate	Vitals	**8.7 deaths/100,000 (2000)**
Reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month.	BRFSS	**17% (1999)**	Alcohol/substance hospitalization rate (adults 20 yrs and older)	MHDDS	**422 hospitalizations / 100,000 (1999)**

Leading Health Indicator			Secondary Indicators		
RESPONSIBLE SEXUAL BEHAVIOR					
Indicator	Source	Value	Indicator	Source	Value
Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active.	YRBS	**87% (2001)**	Percentage of births to mothers ages other than 15-18 years	Vitals	**95.6% (1999)**
			STD's cases		Gonorrhea cases= 600; Chlamydia cases=2928 (ages 15-19 yrs;1999)
			Teen birth rate	Vitals	**25.8 (2000)**
			Mothers with less than High School Education	Vitals	Percentage of of mothers with < HS education =**10.5% (2000)**
Increase the proportion of sexually active persons who use condoms.	BRFSS	**43% (2000)**	STD's Incidence AIDS Incidence		**Syphillis=6.2/100,000;** **Gonorrhea=39/100,000** **AIDS=13.8/100,000**
			Condom effectiveness	BRFSS	Percentage of adults that thought condoms are very effective =**45% (1997)**
			HIV risk	BRFSS	Percentage of adults that thought had no chance of getting HIV =**58% (1999)**
MENTAL HEALTH					
Indicator	Source	Value	Indicator	Source	Value
Increase the proportion of adults with recognized depression who receive treatment.	NA	Asked in 2002 BRFSS	Suicide mortality rate	Vitals	**6.2 deaths/ 100,000 (2000)**
			Mental disorders hospitalization rate (adults 20+ yrs)	MHDDS	**811 hospitalizations / 100,000 (1999)**
			Nervous System Disease hospitalization rate (adults 20+ yrs)	MHDDS	**139 hospitalizations / 100,000 (1999)**

Leading Health Indicator			Secondary Indicators		
INJURY VIOLENCE					
Indicator	Source	Value	Indicator	Source	Value
Reduce deaths caused by motor vehicle crashes.	Deaths	**7.6 deaths /100,000 (2000)**	Adults Drinking and driving	BRFSS	**3.1%** (1999)
Reduce homicides.	Deaths	**2 deaths /100,000 (2000)**			
ENVIRONMENTAL QUALITY					
Indicator	Source	Value	Indicator	Source	Value
Reduce the proportion of persons exposed to air that does not meet the U.S. EPA's health-based standards for ozone.	DEP Ozone Reports	NA	Exceedance days per area	EPA	**5 days** (2000)
Reduce the proportion of nonsmokers exposed to environmental tobacco smoke.			Proportion of nonsmokers exposed to ETS 1 or more hours at home or at work	MTS/ MATS	**8.4% (2001)**
			% of children 0-18 yrs with no asthma living in a household where smoking is permitted		**40%** (1998)
			% of children 0-18 yrs with asthma living in a household where smoking is permitted		**44%** (1998)
IMMUNIZATION					
Indicator	Source	Value	Indicator	Source	Value
Increase the proportion of young children who receive all recommended vaccines	DPH BCDD Immunizations	**81% (by age 2) (2000)**	Measles Incidence count	EPI files	**0 (2000)**

Leading Health Indicator			Secondary Indicators		
IMMUNIZATION					
Indicator	Source	Value	Indicator	Source	Value
Increase the proportion of noninstitutionalized adults who are vaccinated annually against influenza and ever vaccinated against pneumococcal disease.	BRFSS	Influenza: **65%** Pneumococcal: 62**% (2000)**	Rate of hospitalization for Pneumonia and Influenza among persons 65+ yrs	MHDDS	**433 hospitalizations /100,000 (1999)**
ACCESS TO HEALTH CARE					
Indicator	Source	Value	Indicator	Source	Value
Increase the proportion of persons with health insurance.	BRFSS	**92% (2000)**	Percentage of adults who had a Pap test in the last 3 yrs	BRFSS	**85% (1999)**
			Percentage of adults who could not see doctor because of cost	BRFSS	**7% (1999)**
Increase the proportion of persons who have a specific source of ongoing care.	NA	NA	Percentage of adults who had a Check up in past 2 yrs	BRFSS	**89% (1999)**
Increase the proportion of pregnant women who begin prenatal care in the first trimester of pregnancy.	Vitals	**83.8% (2000)**			

Technical Notes

Applying Comparability Ratios to Examine Trends in Mortality

Beginning with1999, mortality data are coded according to the International Classification of Diseases-10th revision (ICD-10). Due to the changes in coding rules, comparison of mortality trends over time using different revisions of ICD is challenging. A method was devised to assess if changes in causes of death are "real" changes, or due to the new classification system. Using this method, death data for 1996 were coded twice; once according to ICD-9 and again according to ICD-10. A comparability ratio (CR) was then calculated by dividing the number of deaths coded according to ICD-10 by the number of deaths coded according to the most similar codes in ICD-9.

A CR of 1.00 indicates that the same number of deaths was assigned to a cause of death whether ICD-9 or ICD-10 was used. A CR of less then 1.00 results from 1) a decrease in the number of deaths assigned to a cause in ICD-10 compared to ICD-9 or 2) the cause described in ICD-10 is only a part of the ICD-9 title to which it is being compared. A CR of more than 1.00 results from 1) an increase in the assignments of deaths to a cause in ICD-10 compared with ICD-9 or 2) the ICD-10 title is broader than the ICD-9 title to which it is being compared.

EXAMPLE: Influenza and Pneumonia[1] Deaths: Massachusetts, 1996-1999

Year	Age-adjusted rate[2]	Comparability Ratio	Comparability Modified Rate (=age-adjusted rate* Comparability Ratio)
1996	41.5	0.6982	29.0
1997	39.1	0.6982	27.3
1998	40.2	0.6982	28.1
1999	30.3		

1. Influenza and pneumonia defined as ICD-9: 480-487 for years 1996-1998 and ICD-10: J10-J18 for year 1999.
2. age-adjusted to the 2000 US standard population, per 100,000.

If you look only at the age-adjusted rate over time, not taking the ICD coding changes into account, it appears that deaths from influenza and pneumonia have decreased between 1996-1999. However, because the coding rules changed between ICD-9 and ICD-10 revisions, we need to apply the comparability ratio to the rates for 1996-1998. (This is done by multiplying the age-adjusted rate by the comparability ratio). Now we can make a fairer comparison and examine the changes between the comparability modified rate and the1999 rate, we see that deaths to influenza and pneumonia have remained fairly constant between 1996-1999, and have actually increased between 1998 and 1999 (28.1 to 30.3 per 100,000, respectively) after taking the changes in the classification system into account.

Glossary

Age-Adjusted Rate

A summary rate designed to minimize the distortions created by differences in age distribution when comparing rates for populations with different age compositions. Age-adjusted rates are useful when comparing death rates from different populations or in the same population over time. For example, if one wished to compare the 1998 death rates between Barnstable County (Cape Cod) and Hampshire County, the age-adjusted formula would account for the fact that 24% of the Barnstable County residents were 65 years of age or older, whereas only 11% of the Hampshire County residents were in this age group.

Age-adjusted rates are calculated by weighting the age-specific rates for a given year by the age distribution of a standard population. The weighted age-specific rates are then added to produce the adjusted rate for all ages combined.

The 2000 US projected population is used as the standard population in this document for consistency with data published by the National Center for Health Statistics (NCHS). **ONLY RATES USING THE SAME STANDARD POPULATION CAN BE COMPARED**. All age-adjusted rates published in this report have been re-calculated using the 2000 US standard population. These rates should NOT be compared to age-adjusted rates previously published which used the 1940 US standard population.

Comparability Modified Rate

A rate designed to assist in the analysis of mortality trends between revisions of the International Classification of Diseases (ICD). A comparability modified rate is calculated by multiplying the cause-specific comparability ratio by the cause-specific rate for years 1994-1998. Comparability modified rates should be used to compare trends between causes of death in 1994-1998 with causes of death in 1999.

Comparability Ratio (CR)

A factor used to adjust mortality statistics for causes of death classified in ICD-9 to be comparable with mortality statistics classified in ICD-10. It is calculated by dividing the number of deaths for a selected cause of death classified by the new revision (ie. ICD-10) by the number of deaths for a selected cause of death classified by the old revision (ie. ICD-9).

Preliminary comparability ratios supplied by the National Center for Health Statistics (NCHS) in February 2001 are used in this report.

International Classification of Diseases, Ninth Revision (ICD-9)

The International Classification of Diseases (ICD) classifies mortality information for statistical purposes. The ICD was first used in 1900 and has since been revised about every 10 years, with the exception of the ICD-9, which was in use between 1979-1998.

Because of coding changes between the Ninth and Tenth revision, caution should be used when comparing data coded under ICD-9 and ICD-10.

International Classification of Diseases, Tenth Revision (ICD-10)

The tenth revision of the International Classification of Diseases was used to code mortality data beginning in 1999.

Preliminary Comparability Ratios

Cause of Death	ICD-10 Code	ICD-9 Code (most similar title)	Comparability Ratio
Motor Vehicle-related injuries	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2	E810-E825	0.9754
Suicide	X60-X84, Y87.0	E950-E959	0.9962
Homicide	X85-Y09, Y87.1	E960-E969	0.9983

Source: National Center for Health Statistics, Preliminary Comparability Study. May 2001.